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WAR DEPARTMENT

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MILITARY INTELLIGENCE
SERVICE

WAR DEPARTMENT
Washington, March 1943

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NOTICE

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It is recommended that the contents of this bulletin be utilized whenever practicable as the basis for informal talks and discussions with troops.

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PART ONE: JAPAN

Section I. JAPANESE IMPRESSIONS OF U. S. WARFARE

1. INTRODUCTION

This section is based on several Japanese documents, of various types. Some of them were written prior to our capture of Guadalcanal and other islands nearby. This fact probably accounts for contradictory statements in some of the documents. Remember that this information comes from enemy sources, and therefore is not necessarily true. The individual documents are separated by dashes. Reference should be made to *Intelligence Bulletin* No. 5, for January, 1943, Section I (Japan), "Jap Estimate of U. S. Land Tactics," page 29.

2. U. S. BATTLEFIELD TACTICS

The U. S. Army's usual fighting is in accordance with the bulletin, "American Army Combat Information, Guadalcanal Island," distributed November 24, 1942. (The Australian Army fights according to Nos. 1 and 2 of the "Special Intelligence Reports.") However, some supplementary information on their usual methods of fighting is as follows:

a. The enemy (U. S.) fires at a slow rate, but is skillful in covering jungle roads and precipices.

b. He is fond of using hand grenades, and fires and throws them at close range.

c. The enemy's fighting spirit is unexpectedly intense. He does not retreat in single-firing combat. However, when charged, he will flee.

d. At a point about 1 kilometer (roughly $\frac{5}{8}$ mile) to the front are scouts who, when attacked, usually flee immediately.

e. Enemy foot patrols usually operate 200 to 300 yards to the left and right, forward and rear of their positions.

The following is our estimate of American strength and capabilities:

a. They stress cooperative firing, and never fight without artillery.

b. When assaulting they fire their pistols.

c. Their tactics are formal, and they lack initiative ability. They do no more than they are told.

d. In defense, they never counterattack and never carry out an offensive.

e. Their supply facilities are extravagant.

f. They know nothing of assault. We should assault whenever possible. Fifty yards is often the best distance for assault.

g. The Americans are untrained for night fighting, and they fire their guns all night long.

h. Their command is untrained for retreat combat. If they begin retreating, pursue them quickly.

i. Their tanks fight separately. However, they are very good at movement.

j. If the Americans are hit on the flanks or in the rear, their command becomes confused and they are unable to fight.

The following are notes on the enemy's (U. S.) methods of combat:

- a.* The Americans choose high places or curves in roads for their positions, and snipe from a short distance (30 to 50 yards).
 - b.* They are skilled in the use of hand grenades.
 - c.* Their will to resist is comparatively strong, and, although we attack them, they still resist.
 - d.* The enemy usually posts an observation party at a point approximately 1,000 yards in front of his position.
 - e.* His observation to the flanks and rear is very good. He always tries to attack our rear and flank.
 - f.* The enemy pays considerable attention to fire support.
-

The enemy's weak points:

- a.* The enemy does not pay much attention to hand-to-hand fighting.
 - b.* His front-line defense is easily penetrated. There are many gaps in his position.
-

Things to watch for in combat:

- a.* The enemy lays piano wire (small, smooth, and made of high-grade steel) in front of his positions.
- b.* He has good fire protection on his flanks.
- c.* He outflanks by using heavy firearms.
- d.* He uses diversion tactics in attack. (Do not pay much attention to enemy decoy tactics.)
- e.* He constructs many false positions.
- f.* It is easy to be deceived by the enemy's decoy tactics in the forest. Send a sentry forward. Don't choose a good position.
- g.* The enemy always shoots from the side of roads or from the edge of high ground.

h. The enemy usually places observation posts about 1,000 yards in front of his position. Watch closely for electric wire and microphones.

i. The enemy always prepares for close combat.

Their (U. S.) impressions of the Japanese Army:

a. The Japanese Army is very strong—always winning.

b. They don't take a serious view of fire power.

c. They are skillful in movement at night.

d. They have a strong esprit de corps.

e. They make minute plans for operations.

f. They charge without any thought of sacrifice.

g. They generally throw their reserves into battle immediately after it starts.

h. Their officers are skillful and industrious.

i. Assaults are skillfully executed.

j. Artillery is skillfully used.

Section II. DETAILS OF NEW RIFLE USED BY JAPANESE

1. GENERAL

The Japanese have put into use a new service rifle (see fig. 1), which is in many ways similar in operation, functioning, and general design to their Meiji 38th-year pattern (1905) rifle, except for a shorter barrel, larger caliber, and improvements in the rear sight. The new weapon is known as the 99th-year pattern (1939) short rifle.

The caliber of the Japanese weapon is 7.7 mm. (.303), the same caliber as the Lee-Enfield rifle and the Bren light machine gun, both standard weapons in the British Army. However, the ammunition is semi-rimless and not rimmed like the British .303 Mk. VII.

One of the new rifles, captured on Guadalcanal, was examined by a U. S. Army Ordnance officer. He described the rifle as a manually operated, air-cooled, shoulder weapon. It is loaded by means of a clip, which contains 5 rounds of ammunition similar to that of our M1903 rifle. However, U. S. caliber .30 ammunition will not fit into the firing chamber of the Japanese weapon, because the distance from the base to the tapered

shoulder of the cartridge case is sufficient to prevent the bolt from closing. In addition, our ammunition is too long to fit in the magazine. British caliber .303 ammunition will fit in the firing chamber, but the bolt will not close because the base of the cartridge case is too

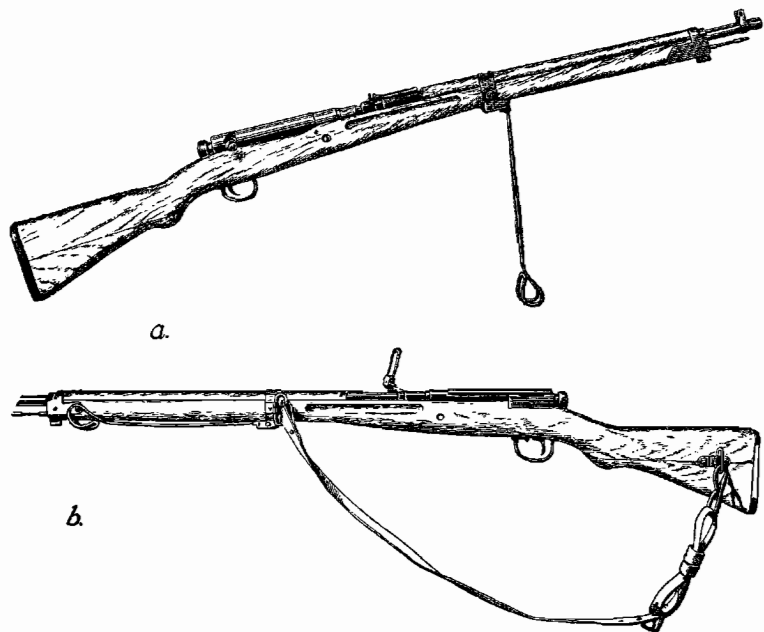


Figure 1.—New Japanese Rifle; (a) Right Side, (b) Left Side.

large in diameter and has too large a rim to fit in the recess of the bolt. Four rounds of the British ammunition will fit into the magazine.

The Japanese rifle is equipped with a cleaning rod, which is carried in a hole in the stock, just under the barrel. The rod is held secure by a catch.

A sling, made of rubberized canvas, is attached to swivels on the lower band and stock on the left side of the rifle.

The rifle has a monopod attached to the lower band. While not in use, the pod can be rotated forward to catch on the stock. This pod is about 12 inches long from the center line of the bore, and it appears to be too long for use in the prone position.

The bolt mechanism of the rifle, like that of the older 6.5-mm Japanese rifle, is covered by a semicircular cover of sheet metal that slides with the bolt in loading and extracting ammunition. The purpose of this cover probably is to keep dirt from fouling the mechanism. The rifle is not provided with a cut-off for firing single shots.

Although distribution of the new rifle may have started as early as July, 1942, it is reasonably certain that a large majority of Japanese infantry troops are still equipped with the old 6.5-mm (.256 caliber) rifle, the Meiji 38th-year pattern (1905), or with its carbine form. This old model has not been changed since 1905.¹

2. TABLE OF CHARACTERISTICS

Weight of rifle (unloaded) with sling.....	8.8 lbs.
Magazine capacity.....	5 rounds
Over-all length.....	44 in.
Length of barrel.....	25½ in.

¹ For details of Meiji 38th-year pattern rifle, see Intelligence Bulletin, No. 5, p. 53. or TM 30-480, p. 92.

Length of barrel and receiver-----	32¾ in.
Rifling (right-hand twist) one turn in (estimated same as U. S. M1903)-----	10 in.
Grooves in barrel-----	No. 4
Depth of grooves-----	Estimated twice that of U. S. M 1 9 0 3 rifle
Caliber of bore (measured)-----	.303 in.
Trigger pull-----	9 lbs.
Range on rear-sight leaf-----	300 to 1,500 m e t e r s (328 to 1,640 yds).
Peep-sight opening-----	1/8 in.

3. DESCRIPTION OF COMPONENT PARTS

In general, the new rifle is composed of four main groups of assemblies and parts. They are described as follows:

a. Barrel Group

The barrel, approximately 25½ inches long, is threaded into the receiver in a manner similar to the method used in U. S. rifles. An alignment mark is provided for assembling the barrel and receiver together. The bore has four right-hand lands and grooves with a twist (approximately the same as the M1903 rifle of one turn per 10 inches. The grooves are cut much deeper than those of U. S. rifles.

b. Receiver Group

With few exceptions, the receiver is constructed much like that of the Japanese 38th-year pattern rifle. A bolt stop is provided at the left rear part of the receiver by merely utilizing a piece of metal that swings a lug clear of the bolt when it is withdrawn from the rifle. The ejector is hinged in the bolt stop and operates in principle like that of the U. S. rifle M1917. (*See* TM which describes the U. S. caliber .30 M1917 rifle.) The rear of the receiver has a slot cut for a lug in the safety. The receiver has grooves cut near the firing chamber for the locking lugs of the bolt, in a manner nearly identical to those in U. S. rifles. The grooves do not appear to be tapered, providing for "slow extraction" of fired cartridge cases; this is a point considered important in the design of U. S. rifles. A gas-escape vent hole $\frac{3}{16}$ inch in diameter is provided in the top of the receiver just in rear of the firing chamber.

c. Front Sight

The front sight is practically identical with that of U. S. caliber .30 M1917 rifle (see TM No. 1917, which describes this U. S. rifle). An alignment mark is provided for matching the front sight with the front-sight carrier.

d. Rear Sight

The rear sight of the rifle is located approximately in the center of the rifle. The sight is of the folding-leaf

type with a regular peep-sight and a battle peep-sight; each has an opening of $\frac{1}{8}$ -inch diameter. The rear-sight leaf has calibrated notches for ranges of 300 to 1,500 meters (328 to 1,640 yds), inclusive. The sight has no means provided for correcting range or drift. The slide on the sight is equipped with two arms (right and left) that can be swung out $2\frac{3}{8}$ inches from the center of the rifle and are probably used for antiaircraft fire. The remainder of the parts of this sight are similar to those of the U. S. caliber .30 M1917 rifle, shown in FM-23-6.

e. Operating Mechanism Group

The operating mechanism consists essentially of the bolt, extractor, striker, mainspring, and safety. These parts, except for the safety, are very similar to those on the U. S. caliber .30 M1917 rifle. The safety fits into the end of the bolt and locks the bolt parts together by means of a lug on the safety, which engages in a slot in the striker, and a lug on the bolt which engages in a slot in the safety. The safety is applied when pushed forward about $\frac{3}{8}$ -inch and rotated approximately 15 degrees clockwise, engaging a lug on the safety with a circular groove in the receiver. This action locks the bolt in the receiver and also locks the striker to the safety. The trigger is not locked when the safety is applied.

f. Trigger-Mechanism Group

The parts and principle of operation of the trigger mechanism are practically identical with those of the U. S. caliber .30 M1917 rifle. The trigger is not designed for initial slack at the start of the pull, but moves with a steady resistance. The mechanism requires a very high trigger pull of 9 pounds before firing, compared to $3\frac{1}{2}$ to $5\frac{1}{2}$ pounds pull in the U. S. M1903 rifle. As the sear is released due to a camming action of the trigger on the receiver, a safety stud on the forward end of the sear is shoved into a groove in the bolt to act as a lock when a round is fired.

g. Magazine Group

The magazine group consists essentially of the trigger guard, magazine, follower, magazine spring, and floor plate; parts similar to these are shown in FM-23-6 for the U. S. caliber .30 M1917 rifle. The floor plate differs in design in that it is hinged to the forward part of the trigger guard and held in position by a catch located in front of the trigger. When the catch is released, the magazine spring and follower fly out with the floor plate. This feature of the Japanese rifle is very good.

h. Stock and Hand-Guard Group

The stock of the Japanese rifle is made in two pieces and fastened together by a dove-tailed joint in the butt of the stock—a method probably adopted to conserve

material. No provision is made in the butt of the stock for any accessories. The receiver and the trigger guard are held firmly to the stock by three screws. The butt of the stock is covered by a butt plate. The hand guard is constructed in one piece and held in place by the upper and lower bands. The wood portion of the rifle appears to be made from wood similar to the U. S. white walnut or a wood softer than the black-walnut stocks used on U. S. rifles.

Section III. JAPANESE WARFARE— FROM THEIR DOCUMENTS

1. INTRODUCTION

This section is based on various types of Japanese documents, obtained from several sources. They have been arranged according to subject matter as far as possible. Some are given almost verbatim, while others have been edited to eliminate repetition and parts considered of little or no value. The individual documents are separated by the use of dashes.

2. MOVEMENT IN JUNGLE COUNTRY

a. During the Day

Although it is said that the jungle is ideal for the individual soldier, if he does not carry woodcutter's equipment he will often find it impossible to get through. Although the density of jungle varies, a woodcutting group of 20 to 30 men under the direction of an officer is necessary for a single column (one team under the man in charge of blazing the way, and several teams under the man in charge of cutting through).

Speed in passing through jungle will depend upon its density, but in general 1 kilometer ($\frac{5}{8}$ mile) will require 2 hours.

To maintain direction, a compass should be used; even so, mistakes in direction are sometimes made because of the tendency to keep following the easiest terrain. Moreover, the magnetic declination on Guadalcanal Island must not be forgotten; that is, to advance west by compass, one must advance approximately $7^{\circ}40'$ northwest. Therefore, it is important to search out the highest ground possible and orient one's self before proceeding.

For bivouacking in a jungle, the foot of a slope is best because it has cover from bombing or strafing. The area around streams might easily be a target for enemy planes, and so is not suitable.

Use such things as small whistles to keep contact in the jungle, but do not shout carelessly, especially at night. On high ground in the jungle, the enemy has installed microphones to learn of our approach and make it possible to bombard us. Often it is impossible to get artillery pieces through the jungle unless they are dismantled.

In the jungle the Americans build individual shelters, surrounded by wire entanglements, or concealed; and, when we approach, they fire tracer bullets or signaling shots to direct bombardment.

In grass plots in the jungle, the enemy sometimes prepares a concentration of fire. It is especially important to search in advance the border areas between jungle and grass plots.

The enemy is extremely well equipped with artillery and heavy infantry weapons, and, on seeing us advance, they freely open up with heavy fire. Therefore, in advancing through open country by day, it is important to cooperate well with our own artillery.

When the enemy discovers even an individual soldier, whether by day or night, they bring concentrated fire on him. Make use of this by causing the enemy to waste his bullets. That is, place imitation targets where troops are not disposed, and at night carry out such clever deceptions as lighting lamps.

In the jungle there are covered machine-gun emplacements at unexpected points. If the first line of troops discovers them, they must take measures to destroy them immediately.

The enemy has few tanks and they are slow, so they can easily be destroyed by such weapons as our rapid-firing gun and infantry gun.

The enemy greatly fears our assaults. Do not forget that final victory always lies in hand-to-hand battles.

b. At Night

Movement within the jungle at night, especially the movement of large units, is extremely difficult. When passing through the jungle at night, even when the course has been marked and plotted during the day, contact is often lost, especially front to rear. Therefore, it is essential to devise means of maintaining contact, such as the use of punk (made from coconut husks), fireflies, and phosphorescent substance (from decayed trees).

As the organization of fire by the enemy is precise, even at night, care must be taken to deploy to such an extent that the control of command will not be impaired. It is important to keep from giving the enemy an opportunity to fire, by making use of terrain features, camouflage, and crawling, and at the same time to devote one's efforts to continuing the advance.

The foremost prerequisite of success is that each unit reach the objective of its attack, and maintain the prescribed direction of advance. It is extremely important to avoid mixing the units of a force, and to keep friendly troops from attacking each other. Therefore, conspicuous landmarks in the jungle area, especially within and in front of the enemy positions, should be previously designated, and it is essential to make the utmost effort to maintain direction by use of the compass, by orientation from high ground, and by every other method.

3. ASSAULTING ENEMY POSITIONS

The terrain within the enemy positions is generally flat, with the exception of the Lunga River area, and traffic is unrestricted. Therefore, within the positions, expect attacks from enemy tanks, covered machine-gun positions, and, at times, concrete pillboxes in the second- and third-line positions.

As a counter measure, prepare hand-to-hand fighting (demolition) squads of infantry and engineer troops, and advance them to the foremost lines. Do the utmost to inflict a surprise attack, and bring up light and mobile guns (presumably light artillery) near the first lines. If conditions permit, have the demolition squads precede the first-line infantry to make the advance of the infantry easier.

It is important to strengthen the shock troops, and to make sure that these troops, by the use of terrain features and camouflage, reach the flank and rear of the enemy firing point and attempt a sudden penetration. At such times, the enemy attempts to fire pistols and throw hand grenades at the nearest of our penetrating troops; therefore it is necessary to penetrate by throwing hand grenades in order to hold the initiative.

Upon occupying enemy positions, it is imperative to pursue the fleeing enemy immediately. By halting, on the other hand, heavy losses from enemy fire might easily be incurred.

Section IV. COMMUNICATIONS

1. INTRODUCTION

Like their German allies, the Japanese have emphasized close coordination of land and air communications. This was especially true in the Malaya and Philippine campaigns, in which the Japanese enjoyed considerable air success. The information below has been translated freely from Japanese documents, and most of it deals with air-ground communication.

2. INSTRUCTIONS FOR LAND-AIR LIAISON

Smooth land and air communications can be maintained only by understanding thoroughly the details of both land and air communication facilities.

Anyone working with antiaircraft communications should be able to identify both friendly and enemy aircraft, and should have a knowledge of the principal characteristics of air tactics and aircraft performance.

Ordinarily one, or a combination, of the following methods of communication is used:

(a) To aircraft from a ground unit: radio signaling panel, message tube (by pick-up), heliograph, flare, smoke signaling, etc.

(b) To the ground from aircraft: radio message tube, heliograph, flare, smoke signal, carrier pigeon, etc.

(c) There may be circumstances when other methods are used. In the case of aircraft: signaling by different movements of the plane, or by dropping paper signals. In the case of ground troops: signaling by different unit formations, by flags, or by placing white panels on the ground to express characters in a message. (Japanese soldiers frequently carry Rising Sun flags for identification purposes.)

Signaling posts mainly use panel signaling methods (if necessary, however, flares or smoke signals may be employed). Pick-up message tubes may also be used if features of the terrain permit.

a. Selecting a Panel Signaling Post

(1) Choose a position from which it will be easy to establish communication. The place selected should not reveal the location of headquarters. It is preferable to establish the signaling post at a separate location.

(2) Make it easy for friendly aircraft to identify a signaling post, but difficult for the enemy.

(3) Select an area large enough for either message tubes or panel signaling. The dropping point for message tubes depends upon the direction of the flying plane, and the direction and velocity of the wind. In any event, tubes should be dropped within a radius of 100 yards from the center of the signaling post. Avoid dropping tubes in villages, forests, tall grass, rivers, or swamps.

(4) The pick-up area should be open and flat, and should be at least 300 feet wide by 1,500 feet long into the prevailing wind. Surrounding areas should be free from obstructions to flying.

b. Dropping Message Tube From Aircraft

(1) Fly over the expected location of the panel signaling post. Give a "call" signal and request a position for dropping.

(2) When the panel signaling post is located, fly low and drop a message tube aimed at the panel.

(3) When message "Received message tube" is shown on panel signaling post, depart. If the signal "Message tube not received" is shown, repeat procedure.

c. Operating a Panel Signaling Post

Communication from a panel signaling post to an aircraft is carried out as follows:

(1) Give the signals "requested" and "call."

(2) If the signal "understand" is received from an aircraft, give the panel message immediately. When the message is completed, give the signal "Message completed."

(3) Sometimes a message may be given without a call signal.

(4) Remove panels on receipt of "understand" signal from aircraft, or when it is believed your message has been received. Repeat the signal if "Repeat signal" is given.

Communication from aircraft to the panel signaling post is carried out as follows:

(1) When the call signal is given from the panel signaling post, reply with the signal "understand," and wait for a panel signal.

(2) Give the signal "understand" if the panel signal is interpreted, but, if not, give "Repeat the signal."

(3) The need for communication from an airplane to a ground unit can be determined by giving the "call" signal from the aircraft, and waiting for a reply from the panel signaling post.

In the event that an aircraft signals, the panel signaling post will reply.

The following precautions must be taken in panel signaling:

(1) Study the position of aircraft and facilitate observation from air.

(2) Make air observation as long as possible.

(3) If a panel is not seen from the air, leave the signal until the observer can see it.

The following precautions have to be taken in order to maintain satisfactory communication:

(1) Lay a panel in the correct position and remove any big wrinkles.

(2) Remove any object which obscures the view of the panel from the air.

(3) When using smoke to draw the attention of an aircraft, do not let smoke obscure the panel.

(4) Panels not in use will be disposed of in such a manner as to be invisible from the air.

(5) Index number panels will be laid from the first figure and down in order, and other panels will be laid or removed at the same time.

In order to speed up the finding of a dropped message tube, more than two persons (pickers) will be posted about every 100 yards.

d. Pick-up Message Tube Method

(1) *Panel signaling post.*—Give the signal “pick-up a message tube” and if the preparation is complete, give the signal “ready.”

(2) *Aircraft.*—If the signal “pick-up a message tube” is recognized, give the signal “understand.”

Wait for a “ready” signal and pick up a message tube by flying low.

e. Identifications

In addition to the Rising Sun on the wings, our planes can be identified by a white line, approximately 8 inches wide, near the tail end of the fuselage.

Friendly planes use the following signals to identify themselves to ground forces:

(1) When a plane is alone, it will waggle its wings. In the case of a formation, the plane at the extreme end will give this signal.

(2) When about to cooperate with land forces, the planes will usually circle overhead.

(3) At night, the navigation lights are usually turned on and off.

(4) When aircraft other than fighter planes approach friendly troops at night, our "shooting star" is fired if necessary.

3. MISCELLANEOUS ORDERS

In order to prevent leakage of information, all detachments will use army telephones as much as possible when communicating with each other.

In writing letters home, you will not give the following information: Name of place, military strength, matters concerning our army, establishments, future movements, or discussion of air raids.

You will be permitted to write the following: Am fighting south of the equator, need more competition, the enemy is weak, am fighting fiercely, and am living under conditions similar to those of the regular residents.

The division signal unit will install the communication net, and must carry out the communication liaison with the reserve unit, with both flank units, and with the command post.

Section V. JAPANESE WARFARE AS SEEN BY U. S. COMBATANTS

1. INTRODUCTION

What United States officers and enlisted men, under fire in the Southwest Pacific, think about Japanese methods of warfare as used against them during the past few months is revealed in individual interviews given below. The names and units of the men are withheld. For the convenience of the reader, the quotations are arranged roughly according to subject matter, and repetition has largely been eliminated.

2. GENERAL TACTICS

The Japanese method of fighting is comparable to *ju jitsu*. They count heavily on surprise and deception, endeavoring to strike suddenly where we do not expect it, and when we are not ready They avoid, if at all possible, the slugging match where weight of numbers and fire power count. They stress the principles of surprise and mobility at the expense of the principles of mass. With these tactics, the Japs have been able to use surprisingly small forces throughout the campaigns of this war to gain their objectives.

. . . . The individual Japanese hates the war and fears death as much as the average Occidental. Faced by a resolute man with a bayonet, Japanese have not stood up as well as their doctrines preach. Units have broken when involved in situations where they were outmaneuvered or outfought.

. . . . Constant practice has most probably made it possible for the Japanese to omit, in their orders for landing operations, considerable details concerning such things as missions to be carried out immediately after landing, successive objectives, frontages and boundaries between units, security measures, communications, and so on The Japanese commanding officer does not commit his forces to a definite plan of action until he has had an opportunity to estimate the situation on the ground as it confronts his troops. Also, this is in keeping with the Japanese policy of allowing subordinates to use full initiative and take independent action as the situation requires.

There are definite advantages in this, and great weaknesses, chiefly those of loss of coordination and breakdown of control, should the commanding officer become a casualty or otherwise fail to exert control. Independent action by subordinates is apt to lead to piecemeal attacks and commitment of the whole unit in a manner not advantageous for the unit, but it does instill in the subordinate the habit of acting without orders when the situation requires. This prevents the breakdown of the entire operation when higher control is lost.

. . . . One gets the impression that the perfect Japanese solution to a tactical problem is a neatly performed stratagem, followed by an encirclement or a flanking attack driven home with the bayonet. This allows the commanders to demonstrate their ability, and the men to show their courage and ferocity in hand-to-hand fighting. The Japanese plans are a mixture of military artistry and vainglorious audacity.

. . . . Bulldog tenacity in carrying out a mission, even to annihilation, will very frequently give a most erroneous impres-

sion of the Japanese strength and will often result in small forces overcoming larger ones, as their units are not rendered ineffective until they are nearly all casualties

After the recent Milne Bay action, in which my organization was very actively engaged, I reached the following conclusions:

(a) Any fear or doubt concerning their own ability which our personnel may have developed, as a result of the spectacular Japanese land conquests during the past 9 months, is gone and forgotten now. Especially in anything like open terrain, where the Jap cannot rely on his many "jungle tricks," he is no match for either the United States or Australian soldier.

(b) The fact that the men have now been able to see, in actual combat, the marked superiority of our weapons as compared to those of the Japanese, has of course given them a great deal more confidence, and the feeling that they have a definite advantage over our enemy.

(c) The 50-caliber machine gun proved itself the outstanding single weapon in stopping the Japanese attack. It was very demoralizing to them, and they had nothing with which to meet its fire effectively.

(d) The continuous strafing and bombing attacks to which the Japs were subjected during all daylight hours would have been justified, even if no casualties had resulted. Aside from the damages, the presence of our planes apparently demoralized and disorganized the enemy to a very great extent.

3. ATTACK TECHNIQUES

The Japanese approach march on Guadalcanal was almost invariably made in close formation along terrain features, such as ridges

The enemy usually attacks on a narrow front, rarely over 300 yards—some units have penetrated a gap of only 15 yards in width. The first element or wave of an attack is a silent group armed with bayonets, hand grenades, and wire cutters. This is followed by an echelon which deliberately makes noises for the purpose of confusing our troops.

When the Japanese infiltrate through our lines, they expect and intend that we will then fall back.

The Japanese fire high. Our experience is that only 10 percent of our wounds are below the knee, 20 percent are below the hips, and the balance are body wounds. Bullet sears on trees are mostly 2½ feet above the ground.

4. DECEPTION

When the Japanese met our line of skirmishers (in New Guinea) they fired all their machine guns into the tree tops above our men. As soon as this fire was countered by our machine guns, their mortars opened up on our machine-gun positions.

On several occasions, when our line of skirmishers was met, large numbers of Japanese ran forward and were met by a withering machine-gun fire. They immediately turned and fled. Our men, with the usual cry of "After the ——," rushed after them with fixed bayonets. Immediately, the fleeing Japanese threw themselves on the ground and our fellows ran into machine-gun fire from the Japanese rear.

In the Milne Bay area, the Japanese plan was to advance and attack during the night and then to withdraw during the daytime, leaving dozens of their men at the top of coconut palms, and in the jungle, with machine guns and Tommy guns. As our forces advanced the next day, they were harassed by these remnants. Often the Japanese were tied in the tops of palm trees and remained there after they were shot.

(Comment: The Japanese policy of advancing at night and hiding during the day may have been dictated on the spot by the constant strafing and reconnaissance by our aircraft.)

5. MORALE

. . . . Although the state of Japanese morale (on Guadalcanal) varied a good deal with different units, as a whole they had been softened up in morale and shortened in supply before their withdrawal In the early stages at Guadalcanal after Jap reinforcements had landed, they were confident that our forces would surrender. Subsequent events shook them a great deal, and they had a "relapse" as a result of defeats, losses, diseases, poor supply, and failure to properly reorganize broken and defeated units.

. . . . The Jap soldier is determined and persistent, and especially tough if our forces show any signs of breaking. Whenever the Jap is met with courage and suffers losses, he loses most of his dash, although he will keep trying.

Our Marines do not consider the Jap a particularly tough opponent when met on anything approximating even terms. When cornered and hard put, the Japs very often get into a panic, and show as much fear as any other soldiers under similar circumstances.

There is evidence that some units (Japanese) are practically ostracized if they suffer defeat. Marines have come upon these units, found living apart from the rest of the troops, and apparently not having any contact or supply. It is not known how much of this is due to Jap psychology, and how much is due to the inability of broken units to secure a portion of the limited supplies of more fortunate units. A great many Japs are wandering around in small bands, which are continually being killed off, both by our own and native patrols. These broken units apparently do not reorganize well with other units, and within the

defeated unit itself there appears to be no organization whatever. Starvation is common among those who are separated from the main forces. They remain deceptive and cunning, however, and many of them will walk into certain death in order to get a shot at our troops.

Japanese prisoners talk freely, as a rule, and are truthful. They know about heavy Japanese losses (in this area); it has affected the air force in particular. For instance, they say that the "left wing" man of a formation rarely returns, and pilots prefer not to fly in this position. Pilots and crews consider Henderson Field a bad place to attack, expect heavy losses, and say that the antiaircraft set-up is tough. . . .

6. ARMAMENT

a. Artillery

The Japs on Guadalcanal did not make as good use of their artillery as they might, and they seemed to work upon the principle of the single gun rather than concentrated battery support. . . .

There were a great percentage of duds in the Jap artillery ammunition. . . . Gun positions were hard to locate because they were well concealed in the jungle. . . .

There have been several puzzling examples of the Japs' apparent disregard for their own artillery. In one case, the Marines captured four new guns and a large quantity of ammunition within 300 yards of Henderson Field. The guns were in position to fire upon the field but had never been fired, and not a Jap was in the vicinity when the guns were taken.

b. Powder

The Japanese powder produces less flash and smoke than ours. (Comment: Recent U. S. Ordnance tests proved that the Japa-

nese powder itself produces as much smoke and flash as ours. However, the Japanese rifle has a smaller caliber, a smaller charge, a longer barrel, and a lower muzzle velocity than ours; these factors, which make combustion more complete, tend to reduce smoke and flash.)

7. DEFENSE TACTICS

a. General

The Japanese system of defense is based on maneuver, stressing to the limit the necessity of striking back when the attackers are disorganized, even to the extent of hitting them while they are deploying for the attack. It seems remarkable that the Japanese should indicate that the way to cope with our greater fire power is to increase the size of their reserves at the expense of their front-line defenses.

The Japanese counterattacks are not primarily aimed merely at driving the enemy out of areas he has taken, but rather at striking him in such a manner that the initiative passes to the Japanese and decisive results are gained. The Japanese do not intend to whittle down the attacks by a strong defense, until the attack bogs down. They plan on giving with the blow and hitting back suddenly and decisively when the attacker has become disorganized by his own penetration.

To the Japanese military, tactics is an art, with decisions gained by skill, not by sheer power. Their policy for the use of maneuver may appear to lead toward complicated evolutions. Training and the delegation to subordinates of the initiative for independent action are most probably the factors that make such tactics simple.

b. In the Buna Area

The first highly organized Japanese defense positions encountered by U. S. troops in the present war were in the New Guinea area. American observers considered the positions very strong, despite the fact that the area is low and practically level.

The positions consisted of bunkers and trenches, which were never over 3 to 4 feet deep because the water level is approximately 5 feet below the surface of the ground.

Because of the sandy soil, the trenches were only about 1 foot wide at the bottom and $4\frac{1}{2}$ to 5 feet wide at the top. The bunkers were built of logs and dirt. Narrow slits were made for machine-gun fire.

The trench systems, or defense areas, were arranged in sections which permitted excellent fields of fire to the front and both flanks. To facilitate this, the flank trenches were constructed at an angle of about 40° to 45° to the front. Each defense area, accommodating not more than a platoon, had four separate dug-outs.

A large portion of the trenches was covered with a mixture of coconut palm logs and dirt which was 8 to 10 inches thick. Coconut logs are tough and do not splinter much. This protective cover was strong enough to resist direct hits of all our weapons of less than 88-mm caliber. (The British 25-pounder gun-howitzer is 88 mm)

The defensive area consisted of jungle, open spaces covered with high grass, and coconut groves, which had a high grassy undergrowth.

Both light and heavy machine guns were used extensively by the Japanese, who seemed to have plenty of ammunition.

PART TWO: GERMANY

Section I. GAS WARFARE

1. GENERAL

Since World War I, when the German Army first made use of poison gas, German scientists have conducted exhaustive research in the field of chemical warfare. The Germans are known to be well prepared for this type of combat, both offensive and defensive, and there is little doubt that they would use gas with their characteristic vigor and thoroughness should they decide that the situation seemed to demand it.

The agents that Germany may use do not differ materially from those available to the other Powers, and may be classified as follows:

American classification

Vesicants (blister gases).
Lung irritants.
Lacrimators (tear gases).
Irritant smokes.

German classification

Yellow Cross (*Gelbkreuz*).
Green Cross (*Grünkreuz*).
White Cross (*Weisskreuz*).
Blue Cross (*Blaukreuz*).

When applied as code marking to ammunition, there is some alteration of this classification. Rings replace crosses, and two rings of different colors indicate a gas with dual properties. For example, a green ring and a yellow ring indicate that the charging is a lung irritant gas with some vesicant properties.

In general, German chemical warfare troops are organized in regiments, battalions, and companies. Although they are called "smoke troops" (*Nebeltruppen*), it is to be emphasized that they are as well equipped to work with gas as with smoke. For defense, decontamination companies are included, and there are also some specialized decontamination companies among the medical troops.

2. DEFENSE

If all troops are adequately supplied with antigas devices, gas warfare loses much of its effectiveness and power to terrorize. Before initiating gas warfare, an army must protect its own troops against retaliation. In the German Army antigas training is very well organized; as a basis for this work, there are a number of antigas schools to which officers and non-commissioned officers of units are sent.

Of all the agents mentioned in paragraph 1, the vesicant type, or a lung-irritant type possessing vesicant properties, seems to be preferred by the Germans. Such gases are really liquids which evaporate quickly,

yielding heavier-than-air gases which collect and persist in low portions of the terrain. Both the liquid and the gas will produce severe burns if they come in contact with the skin. Ground and matériel which have been contaminated by these agents are dangerous over a period of hours or even, in extreme cases, for days.

All German troops are equipped on an adequate scale with standard materials for decontamination of personnel and weapons. These include the gas mask, anti-gas tablets called "Losantin" (to be moistened and made into a paste), an antigas sheet in a pouch (for protection against vesicant spray), and a pocket flask of weapon decontaminant. Each soldier is impressed with the importance of being able to protect himself, and of knowing how to decontaminate his personal equipment. In addition, certain unit equipment is issued, such as light and heavy protective clothing, and gas-detector sets for gas scout sections or gas sentries. Special equipment for decontamination on a large scale includes decontamination vehicles, which are half-tracked trucks equipped with rear hoppers for distributing bleaching powder; and clothing decontamination vehicles, which are large, windowless, six-wheeled trucks containing a boiler for generating steam quickly, a steam chamber, and a drying chamber. Some sections among the veterinary troops specialize in decontamination of horses.

The Germans lay great stress on not allowing contamination of terrain to hold up an advance. The gas

scout sections are equipped with light antigas clothing, and have the duty of finding and marking off contaminated areas. A special plow is used to make safe, narrow paths which permit the rapid passage of troops in single file. This implement is a ditching plow with a rubber-tired, single-axle carriage and two plowshares; it is drawn by a decontamination truck. The two plowshares turn the sod over in opposite directions so that a shallow trench about 20 inches wide, as well as the slopes of the overturned earth, are free from contamination. For large areas, specialist troops are brought up for decontamination in accordance with a definite plan.

3. OFFENSE

a. Weapons of Smoke Troops

If gas warfare breaks out, the primary role will be assigned to the smoke battery, as it is intended to fire gas as well as smoke. There are two different versions of this mortar; the model 35, which has a range of about 3,000 yards, and the model 40, which has a maximum range of about 6,500 yards. Ammunition charged with the various agents mentioned in paragraph 1 is believed to exist.

In 1942 the Germans were distributing a new type of weapon, the *Nebelwerfer 41*, which they classify as a mortar, although it is really a rocket weapon with six barrels set in a circle like the chamber of a revolver.

The barrels have no breech and are open at both ends. This weapon can be used for firing high explosive, gas, or smoke projectiles.

The decontamination batteries of the smoke troops may also engage in bulk contamination. For this purpose they are equipped with contamination vehicles. These are standard half-tracked vehicles on which containers have been mounted. The liquid vesicant is emitted by what appears to be a spray arm extended well beyond the back of the vehicle. Emission, which is produced by compressed air, is controlled from the driver's compartment.

b. Equipment of Other Arms

Although the smoke mortars are perhaps more efficient for gas projection, it is believed that extensive supplies of gas-charged shells have been set aside for the 105-mm and 150-mm field howitzers. Also, gas shells may be fired from the light and heavy infantry guns.

Aircraft are important in gas warfare. The Germans consider low-altitude (under 1,000 feet) vesicant spray especially effective, both against personnel and for ground contamination. Moreover, the use of aircraft bombs with chemical charging is a possibility to be taken into account, if gas warfare should start.

c. Miscellaneous Gas Weapons

The Germans possess gas grenades, with which their parachute troops might be equipped. Ammunition for

antitank rifles, models 38 and 39, includes armor-piercing tracer bullets charged with tear gas.

4. THEORETICAL USE OF GAS IN THE FIELD

The Germans distinguish between gas attack for cloud effect and gas attack for contamination.

a. For Cloud Effect

Gas attack for cloud effect by means of nonpersistent gases, may be attempted to achieve the following purposes:

(1) The Germans might choose to put the opposition out of action before antigas measures could be adopted.

(2) The Germans might employ gas bombardment for several hours, or even days, to neutralize opposing units, weaken their gas discipline, and inflict casualties.

(3) The Germans might employ intermittent gas bombardment to compel opposition troops to wear gas masks during a long period, and thus weaken gas discipline.

(4) The Germans might introduce gas ammunition into a mixed bombardment of high explosive and smoke bombardment.

b. For Contamination¹

The German theory of contamination by means of persistent gases (such as mustard) is more concerned with defense and withdrawal than with attack. However, in attack they might consider contamination useful for neutralizing centers of resistance which could then be bypassed, and for safeguarding a flank. When contaminating with artillery or aircraft, there is also the possibility of hindering the opposition's withdrawal or of changing its direction. However, the scope of such tactics is limited, inasmuch as they can hamper the advance of friendly troops.

¹ It must be remembered that contamination, in a military sense, means the process of spreading an injurious, persistent chemical agent, which will remain in effective concentration at the point of dispersion from a few minutes to several days, depending on local conditions.

Section II. VISUAL SIGNALS BETWEEN AIR AND GROUND FORCES

1. INTRODUCTION

The German system of visual communication between ground troops and aircraft is well developed. Extracts from a German document explaining the system are reprinted below. It must be remembered, however, that the Germans take the precaution of changing their signals as often as possible. Perhaps the chief value of these extracts is that they illustrate basic methods of air-ground visual signaling and the importance attached to them by the Germans.

2. COORDINATION

Coordination between Army and Air Force is to be arranged through the respective headquarters prior to each action. The appropriate headquarters of these two branches of the service are also responsible for keeping themselves mutually and speedily informed regarding all movements in their battle area, both on the ground and in the air.

To speed up recognition, ground troops should possess detailed knowledge of our own aircraft types, of the prearranged signals, and of the air situation. This information should be distributed

down to companies, whose commanders may give orders to signal. If air crews are aware of the situation on the ground, of the general conduct of ground troops in battle, and of the pre-arranged signals, gunners will be able to distinguish more quickly between enemy troops and friendly troops.

Ground troops must give their signals early and in a position easily observed from the air. Aircraft must be able to see the signals before arriving over the position.

Aircraft must not give their signals too soon, inasmuch as cover often interferes with observation by ground troops. Only when the ground is flat, and when the aircraft are flying low, may early signals be given. Since recognition by ground troops is difficult when planes appear overhead too suddenly, unnecessarily low flying over our own troops is to be avoided.

3. DAY SIGNALS USED BY GROUND TROOPS

In the daytime, ground troops must give recognition signals when air units call for them by giving their own recognition signals, or if friendly aircraft threaten to attack.

Also, ground troops may give daytime recognition signals without being called upon to do so if they consider it necessary to identify themselves to friendly aircraft—especially where terrain features tend to obscure ground troops from air observation.

a. Orange Smoke

Orange-colored smoke is the signal most easily recognized from the air. It means "own troops are here." It is the chief recognition signal for all ground troops.

b. Identification Panels

Identification panels will be laid out so that they may be read from aircraft flying toward the front. They must be arranged in good time, and on a background against which they can be

picked out clearly from the air, so that the aircraft will not be obliged to circle over the battle area.

The panels should be spread on open ground, wherever possible, since aircraft usually observe while approaching, and not when directly over a position. Trees, bushes, and other objects may prevent aircraft from seeing the signals obliquely. Every effort must be made to make the signals as large as possible. Panels may be lifted only when the aircraft are out of sight.

Yellow cloths mean "here is our own front line." They are to be used only for this message, so that the front line will always be clearly indicated. The aircraft can draw its own conclusions as to the battle situation. In general, yellow is easily recognizable from a moderate height; a number of yellow cloths spread out side by side will make identification easier. When our own troops advance, the yellow cloths must not be left behind.

In addition, the orange smoke signal is to be used as extensively as possible.

c. Swastika Flags

Swastika flags can scarcely be identified at all from great heights, and only with difficulty from moderate heights. They mean "own troops are here." As a rule, they are used in rear positions, but may be used in the front line if yellow cloths are not available or if no particular value is attached to a distinct recognition of the front line as such. Since swastika flags alone are generally not sufficient for identification purposes, it is advisable to use the additional signal of orange smoke.

d. Improvised Signals

If the usual recognition signals are not available, troops may improvise signals, such as the waving of steel helmets, handkerchiefs, and so on. However, these signals afford no guarantee that the ground troops will be recognized.

4. DAY SIGNALS USED BY AIRCRAFT

In the daytime, aircraft must give recognition signals when fired on by friendly troops. Daytime signals may also be given by aircraft which suddenly emerge from clouds over friendly territory, or which wish to request signals from ground troops.

Ground troops will generally identify friendly aircraft by noting the type of plane, the national marking, or special painting. When security permits, messages will be dropped in message boxes which emit a yellow smoke while dropping and after reaching the ground. If these boxes are not available, messages will be dropped in message bags, to which a red-and-white streamer is attached. Aircraft may improvise such signals as the dipping up and down of the nose and tail of a plane, wing dipping, or repeated spurts of the motor ("jackrabbiting").

5. NIGHT SIGNALS USED BY GROUND TROOPS

At night, ground troops must give recognition signals when these are requested by our own aircraft, and when the situation warrants anticipating a bombing attack by our own aircraft. Ground troops use light signals of all types, making extensive use of Very lights. Codes are changed continually, of course, and are made known down to companies.

6. NIGHT SIGNALS USED BY AIRCRAFT

Aircraft must give night signals when there is danger of attack by friendly troops. Further, aircraft are permitted to signal at night if they have lost their bearings and wish to know whether they are flying over friendly territory; if they know, or believe, that they are crossing the front on a return flight; when they wish to request friendly troops to give signals; and when they are

about to land at an airdrome. Aircraft must continually change the meanings of their fixed light signals and flashed searchlight signals.

7. USE OF VERY LIGHTS

The Germans use white, green, and red Very lights. At the time the above instructions were published, German aircraft used white Very lights to request ground troops to give recognition signals; green, when a plane was about to drop a message and wished ground troops to indicate where they preferred to have it dropped; and red, to convey the message "Beware of enemy antitank weapons." Red smoke signals also were used to convey this last message, while blue or violet smoke signals were used to indicate the presence of enemy tanks.

Section III. INFANTRY FIELDWORKS

1. INTRODUCTION

The following extracts from German Army documents illustrate the general principles that the Germans follow in constructing infantry fieldworks. The Germans preface their doctrine on this subject with a reminder that the construction of positions "must conform to factors determined by the enemy, the ground, one's own forces, and the time and supplies available. Fire positions and fields of fire must be established on the fire plan before the work is marked out and construction begun. Fire positions must merge with the surrounding country in such a fashion that the maximum possible use is made of natural concealment. Furthermore, all positions, even those to the rear, will be kept camouflaged as much as possible while they are under construction."

2. GENERAL PRINCIPLES

The time required for the construction of fieldworks must be calculated carefully. Periods of time given at the end of this section represent the minimum requirements. A few com-

plete and well-concealed positions are worth far more than a large number, half-finished. When our troops are in the immediate neighborhood of the enemy, construction must be carried out in such a fashion that some form of defense is possible at all times.

In order to decrease vulnerability to high-angle enemy fire, weapon pits must be constructed no larger than is necessary. The walls of the pit must at all times be kept at a suitable angle, varying with the nature of the ground, so that they cannot fall in. In the case of loose ground, and in constructing fire positions in permanent fronts, it may be necessary to revet the walls of the pit. Revetting with resistant material makes the work of clearing out the pit after a shell-hit more difficult; the pit must then be excavated to a larger size than before.

If the situation and enemy action permit, the surface soil is removed from the immediate neighborhood of the pit, to be used later in camouflaging the position. The spoil, or subsurface soil, must be deposited far enough from the pit to forestall the necessity of moving the earth a second time. The parapet must be extended far enough on each side to afford the riflemen a field of fire on all sides, meanwhile protecting them against enemy flanking fire. Also, the parapet should be kept low. The field of fire should not be affected by irregularities in the surface of the ground.

A firing position that can be readily assumed remains the first consideration. The depth of the excavations for arms or weapons depends on the required firing height. Dimensions must also be adjusted to conform to the height of the riflemen. In setting out the work, measurements can be taken by the length of a spade.

Length of short spade.....	20 inches.
Length of long spade.....	3 feet 7 inches.
Approximate length of blade.....	8 inches.

The excavated earth should be disposed of in the least obvious manner, and by a single route leading from one side of the pit. The path by which the earth is transported must be regulated carefully.

Each position must have an alternative position. This must be at least 50 to 60 meters from the original position. It must fulfill the same requirement. "Field of fire comes before cover." As always, camouflage is of primary importance.

If time allows, pits should be connected by communication trenches.

Along lengthy communication routes, antitank pits should be dug at intervals of 50 yards. The communication trenches should follow a zigzag course, and should be constructed with rounded, rather than sharp, edges.

The type and construction of positions is determined above all by the time available for the work. Ground conditions, drainage, weather, facilities for concealment, available personnel, entrenching tools, other tools, and construction materials must also be considered.

The following will serve as a guide for the construction of positions on average terrain:

Available time

Type of construction

A few hours--- Machine gun and rifle pits, affording protection against machine-gun fire and fragments of shells with impact fuzes. Simple wire obstacles should be constructed. In the case of light machine guns, antitank rifles, heavy machine guns, light mortars, and antitank guns, overhead protection for riflemen and their weapons may be provided at the same time. With heavy mortars, light infantry guns, and heavy infantry guns, overhead cover for the crew must be constructed before that for the weapon.

*Available time**Type of construction*

- Half day----- Thorough construction of pits and recesses under parapets, providing protection against light high-angle fire and splinters from ricocheting and time-fuze shells, protection against weather, and increased comfort for the crew.
- Whole day----- Strengthening of wire obstacles, strengthening of pits and firing bays. Connection of weapon pits within the system by crawl or communication trenches.
- Several days--- Continuous trenches.
- Several weeks-- Systematic construction of defenses with continuous trenches and shelters.

Section IV. INTERROGATION OF BRITISH PRISONERS OF WAR

1. GENERAL

The material in this section consists of two items: a translation of a German printed form issued in pads and designed to be filled in after the interrogation of British prisoners of war, and a translation of a set of German instructions entitled "Notes on the Interrogation of British Prisoners of War." These instructions were found attached to the inside cover of a pad of the forms. This material should give the reader an excellent idea as to what kind of standard information the Germans make every effort to obtain from United Nations prisoners.

2. A SPECIMEN BLANK

No. 01061

FORM FOR P. W. INTERROGATION (ENGLAND)

 (Interrogating Unit) (Place) (Day)
 To

CHIEF OF THE GENERAL STAFF OF THE ARMY
 Dept.—Foreign Armies.—West.
 To be transmitted by the quickest means.

Name:	Taken	Unit	
Christian Name:	At	Name	Army Corps.
Year of Birth:			Division.
Rank:			Brigade.
Number:	On		Battalion.
			Type of Company.

Regular Army or Territorial Army	Place	Command	Mobilization and transport overseas				
			Date	Table of organization of unit	Embarkation Place, Date	Disembarkation Place, Date	Route taken (places and dates)

Unit arrived in the line	What units in the same Division?	Other units known
At From To		Name. Division. Place. Date.

Particulars of weapons, tanks, equipment, antigas equipment

Morale: (Losses)

Other important items.

REMARKS:

1. Important papers (diaries, orders) are to be attached to the copy sent direct to the Chief of the General Staff in the Field.
2. Items of local interest only are to be put on a special sheet only for units interested.

3. THE INSTRUCTIONS

Notes on Interrogation of British Prisoners of War.

a. The blanks are to be filled in as fully as possible.

b. Exact identification of the unit is particularly important. In the infantry, "regiment" actually means the parent unit. It has no number—only a name. The tactical formation that corresponds to our "regiment" is the British "brigade." The brigade is identified by a number, and consists of three battalions from various regiments. Since battalions from one regiment will be found with different brigades, it is especially important to find out the battalion's number.

Units of other arms are numbered, except for certain tank and armored units which were cavalry, originally and which have kept their names.

For further remarks on British Order of Battle, list of regimental names, explanation of ranks, badges, and English abbreviations, see the handbook, "The British Army."

c. Further questions to be put to prisoners:

(1) Have there been any alterations in the Order of Battle as printed in the handbook? Are alterations in progress, particularly with regard to armored formations?

(2) How far have infantry and other units been equipped with antitank and light antiaircraft units? With which units are there signal units that do not belong organically to Division Signals? What is known about the Army Air Corps or the Airborne Division (parachute and airborne troops)? Strength, organization, training, equipment, and armament of Commandos and Special Service Troops?

(3) Effect of our weapons and tanks, morally and technically? Losses in personnel, weapons, and equipment?

(4) What is known about Amphibious Transport (*Landungsfahrzeuge*)? New weapons (machine pistol, antitank, artillery, explosives, and hand grenades)? New tanks, especially new in-

fantry tanks, and new armament and armor on known types of tanks? Active and passive Chemical Warfare preparations?

(5) What is known about operations in conjunction with Americans and other Allies.

(6) What rumors are there about future operations?

(7) What about the home front? Formation of new units? Movements overseas? Situation regarding supply and food? Opinions as to prospects in the war? General morale?

Section V. AIR FORCES

1. HENSCHEL 129 BOMBER

The Henschel (Hs) 129 is a single-seat attack bomber used for close support of ground forces and for attacks on armored ground targets.

It is a twin-engine, low-wing, single-rudder monoplane of all-metal, stressed-skin construction, with retractable landing gear (see fig. 2). When the wheels

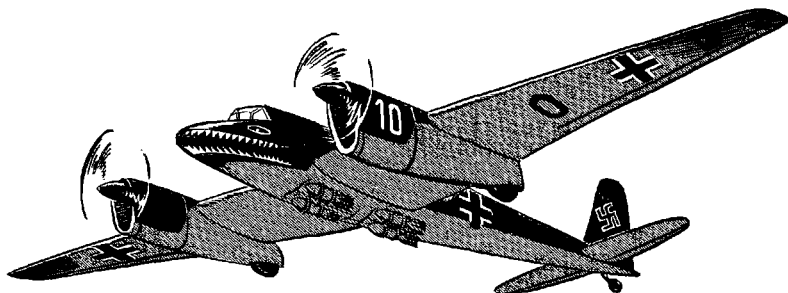


Figure 2.—Henschel (Hs) 129 Bombers.

are up, they protrude slightly from the engine nacelles. The center section of the wings, inboard of the nacelles, is gull-shaped and the tail section is of cantilever design with a tall fin and rudder. The nose of the fuselage

drops steeply away from the cabin, thus affording the pilot a better downward field of vision.

This aircraft is powered by two 450-horsepower air-cooled, in-line, inverted V-12 engines and has two-blade, variable-pitch propellers. One version of the Hs 129, however, may be fitted with Gnome-Rhone 14-cylinder radial engines. The plane has a cruising speed of 170 miles per hour at 10,000 feet, and a normal cruising range of approximately 400 miles.

The "129" has an estimated wing span of 50 feet, a length of 38 feet, and a gross weight of about 9,000 pounds. The maximum bomb load is believed to be about 2,200 pounds and to consist both of antipersonnel and combined splinter and high-explosive bombs.

The armament consists of one 30-mm cannon, for use against tanks and armored vehicles, and four machine guns—two light and two heavy—all rigidly mounted in the nose of the fuselage.

The aircraft is heavily armored on the underside. The cabin is also armored, although the distribution and thickness of the plating has not been determined.

The nose of the fuselage is painted to resemble a pike fish's head, which seems to be a standard marking on the Hs 129. A similar design has been previously noted on Messerschmitt 110's, and may have been adopted in the hope of increasing the demoralizing effect of low-flying attacks on troops. It is believed that machine guns are mounted in the eyes of the "pike's head."

In tactical operations, the take-off is made in echelon by sections. En route to the target, planes fly in echelon formation, with the sections stepped up—a closed formation is flown when there is danger of attack by enemy fighters. Antiaircraft defenses are avoided, as far as possible, by changing course, by making use of weather conditions, and by approaching from the sun.

The attack is made by sections, one section diving as another leaves and as a third approaches the target. The aircraft keep close formation and dive straight onto the target at about a 45° angle. However, the angle of dive varies according to the thickness and slant of the armor plating protecting the objective. For maximum effectiveness, the shell should strike the armor as near to the perpendicular as possible. The plane should not be dived at an angle of more than 70° nor at a speed in excess of 345 miles per hour.

Antipersonnel bombs are released during the pull-out from a height of 65 to 165 feet and thereafter the target is subjected to cannon and machine-gun fire.

After leaving the objective, the planes fly close to the ground in line-ahead or in echelon, and strafe any available ground target. The formation is ultimately reorganized over a weak antiaircraft defensive area and the return flight is made at an altitude varying between 1,700 and 3,300 feet.

Ground-attack aircraft are usually accompanied by fighter escort, but the size and method of escort depend

on the strength and employment of the enemy air force in the area.

2. DORNIER 217E BOMBER

The Dornier (Do) 217E bomber is a twin-engined shoulder-wing monoplane, which has several improvements over the earlier Do 17Z and Do 215 models. The plane is powered by two 14-cylinder radial engines, each of which has 1,600 horsepower. There are four men in the crew: The pilot, a bombardier, and two gunners, one of whom acts as a radio operator.

The estimated speed of the Do 217E is 310 to 325 miles per hour at an altitude of approximately 17,000 feet. The normal range of the plane is about 1,100 miles—almost twice this distance by use of extra fuel tanks. This range is far greater than that of the Do 215. The maximum bomb load of the improved plane is about 6,600 pounds, several times greater than the Do 215. Little change has been made in the armor.

The addition of tail dive-brakes is one of the most interesting improvements found on the Do 217 E. Since the brakes resemble an umbrella or parachute in descent, the aircraft has been nicknamed the "umbrella" or "parachute" plane. The brakes are said to have greatly increased the stability of the plane while dive-bombing. However, recent developments indicate that tail brakes alone are not sufficient to control the speed of this type of plane in steep dives. In the latest mod-

els of the Do 217 E, additional brakes are mounted on the underside of the wings, inboard of the engines.

The umbrella-like brakes consist of four flaps, which, when in a closed position, lie flat against the four sides of an extension of the tail. They open much like an umbrella, unfolding in gradual stages in ratio to the steepness of the dive. When opened to the fullest extent in the maximum dive, the flaps—which have slots and holes along the edge to act as vents—hold the speed of the plane to about 350 miles per hour. In an emergency, the four pins that secure the entire tail assembly to the fuselage may be withdrawn. The brakes are thus jettisoned (detached and dropped), and the plane is controlled in the normal manner.

Other improvements in the plane include installation of torpedo and mine-laying apparatus, and a new type of automatic pilot.

Section VI. MISCELLANEOUS

1. LIGHT ASSAULT BRIDGE

a. Version 1

The Germans make use of a portable light assault bridge (*Kradschützensteg*), which can accommodate manhandled antitank and infantry guns, light cars, motorcycles with and without sidecars, and infantry in file.

This light assault bridge (see fig. 3) consists of prepared wooden sections which, when assembled and laid across small, inflatable boats, become the superstructure of the bridge. A single boat with its superstructure is known as a "bay." The work of assembling is carried out on land, preferably under cover, and the finished bridge is then carried to a desired site and launched.

The bridge is constructed in lengths of approximately 80 feet, each length consisting of 5 bays. A strong individual timber frame is lashed to each inflatable boat. Track supports are then laid down and secured by screw clamps, and finally the tracks themselves are screwed, nailed, or lashed into place. The tracks consist of planks which are 16 feet 5 inches long, 8 inches

wide, and $1\frac{1}{2}$ inches thick, with two planks on each side of each boat unit (see fig. 3b).

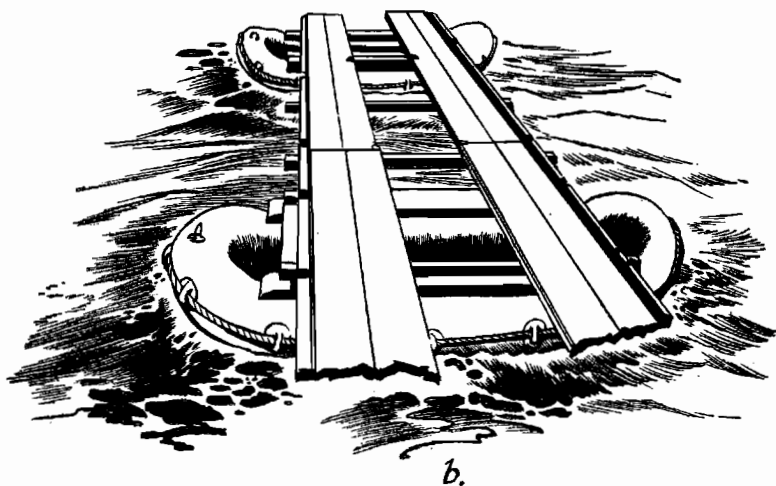
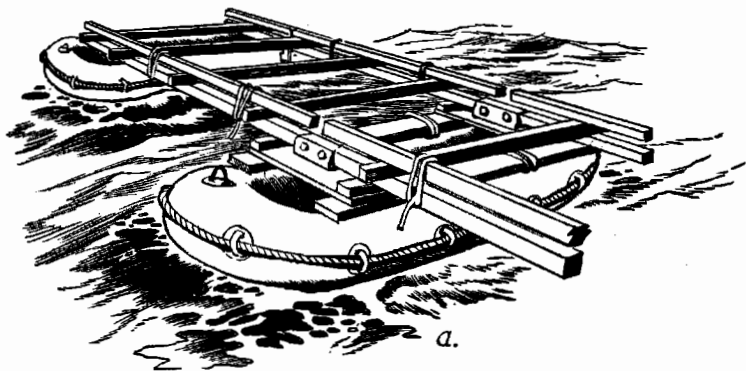


Figure 3.—German Light Assault Bridge (Version 1).

Water obstacles less than 10 feet wide can be spanned by a single unit without floating support. Such a unit can be carried and assembled by two men.

b. Version 2

The tracked light assault bridge also comes in a heavier version, which will carry light motor transport with a maximum load of 1 ton, provided that the track width does not exceed 4 feet 6 inches.

Although the two bridges resemble each other, the heavier version is decked, rather than tracked, and affords a track 5 feet 1 inch wide. There are two boats per bay, so that the bridge can be separated into independent rafts, unlike the tracked bridge, in which the joints of the superstructure meet in the center of each boat (see fig. 3a).¹

2. USE OF SMOKE AGAINST TANKS

The Germans have been conducting experiments to test the effect of smoke weapons used at close quarters against tanks. No information is available as to the type of tank and the type of grenade employed in these tests. However, it is known that the results convinced the Germans that smoke can be an important factor in combatting tanks. Four experiments under varying conditions yielded the following data:

a. Experiment 1

A smoke hand grenade was set off beside a stationary tank; the tank's hatches were closed, and its engine was

¹ U. S. troops should not use these bridges unless they have been inspected and approved by Engineers.

running. Not only the suction of the engine fans, but leaks in the forward entrance hatch, the mantlet of the hull machine gun, the turret ring, and the turret ventilators, filled the tank with a thick accumulation of smoke. Opening the hatches did not ventilate the tank sufficiently.

The Germans decided that a tank crew, fighting under these conditions, would be forced out of the tank after a short period, and that the driver and hull machine-gunner would suffer most from the effects of the smoke.

b. Experiment 2

In a second experiment the conditions were duplicated, except that the engine was turned off. It was discovered that although smoke entered the tank, evacuation would have become necessary only after several minutes—and, even then, probably for no one but the driver.

c. Experiment 3

A third test was held, this time with the tank moving and its hatches closed. Smoke grenades were thrown at the tank, and failed to lodge on it. The crew lost almost none of their capacity to fight, and were affected more by limitation of their vision than by the actual penetration of smoke into the tank.

d. Experiment 4

In the fourth experiment, a moving tank with closed hatches was used; but this time a cable 6½ feet long,

with a smoke grenade tied to each end, was thrown across the barrel of the gun. (After a little practice, the thrower became quite adept at this.) It was found that evacuation of the tank was necessary after 30 seconds. Observation from the tank was, of course, out of the question. The Germans felt that if members of a crew were to show enough presence of mind to put on their respirators instantly, and rotate the turret through 180 degrees, it would be possible for them to avoid the effect sufficiently to bring the tank to safety. However, it was clear that in any case the fighting capacity of the crew would be seriously affected.

PART THREE: UNITED NATIONS

Section I. NOTES ON SECURITY FROM THE MIDDLE EAST

1. INTRODUCTION

“Security in the military sense consists not only of denying information to the enemy, but also preserving information about the enemy which is of use to ourselves.” This statement sums up the British attitude regarding security. All members of the armed forces are continually reminded of the importance of acquiring and guarding enemy documents and matériel so that they may be studied by the proper experts, even though the items may not seem important in themselves. In the following notes the British illustrate very clearly how troops in the field are in a position to cooperate with intelligence officers in preserving information about the enemy, and why the individual soldier is to regard such cooperation as “must.”

2. PRESERVING ENEMY AIRCRAFT

Proper guarding of enemy aircraft which has come into our hands is essential. It is especially important to insure against the looting of such planes. Personnel have sometimes been heard to ask "Why bother? Don't we know all about enemy aircraft already?" No, we certainly don't! And even if we did, it could only be because flawless security work had been done in the past.

As an example of the information that can be obtained from a crash, consider the case of a Heinkel which was shot down by night fighter action. This aircraft crashed in flames, and the wreckage was spread over a square mile. At first glance, it seemed as though nothing remained but charred and unrecognizable fragments. Nevertheless, examination by the proper authorities quickly revealed new points of technical value, as well as production details about where and when the engines and various other parts were made. In addition, valuable papers were retrieved. It cannot be overemphasized that even a scrap of paper may be of value from an intelligence point of view.

At the moment, we are searching for an important development in German radio. A certain apparatus is fitted with a destroying device, and if anyone should happen to tamper with one of these devices on an enemy aircraft which has come into our possession, the apparatus will be lost and essential information along with it.

Therefore, individuals who tamper with items of enemy equipment are doing the Axis a service and are slowing down our own war effort.

3. SAFEGUARDING ENEMY DOCUMENTS

During the Libyan campaign a New Zealand intelligence officer made quick use of some maps that a German major general had not been given time to destroy, and therefore was able to inform

the New Zealand commander that the German 21st Armored Division was due to arrive in the immediate future. The New Zealand general was able to plan his strategy accurately.

A truck serving as an office for the adjutant general and quartermaster of the German 15th Armored Division was captured intact during the Libyan campaign. Intelligence officers rushed its contents back to G. H. Q. by air. There probably had been no greater find in the course of the war up to that time. Not only did the truck contain documents of enemy operational value, but also up-to-date German manuals, publications, and other items, which were enormously useful. Thus, from the military intelligence point of view, it is not an exaggeration to say that the contents of a single truck preserved intact may influence the whole course of the war.

On October 17, 1942, an alert trooper of the 7th Hussars snatched a document from a German prisoner who was in the act of tearing it up. This bit of quick thinking enabled us to identify and locate several German units at a time when information was more than usually scarce.

When charred remnants of paper are salvaged, the complete destruction of which has been prevented just in time, it often turns out that they contain some useful items of information.

Whenever documents are captured, every possible step must be taken to destroy all evidence pointing to the fact that they have been captured; that is, the office in which they were found must be burned, the officer from whose person they were taken must be removed from the scene, and so on.

4. THE SOUVENIR HABIT

A desire to keep captured documents and equipment as souvenirs sometimes results in the loss of much information which

would be helpful to the armed forces as a whole.¹ This point is well illustrated by the case of a battalion commander who, in forwarding his unit war diaries to second echelon, made a special request that certain attached captured documents should not be removed from the file in which he was sending them. It was discovered that these documents had been captured sometime before, and unfortunately had never been passed on to the proper authority. Soldiers sending parcels home have included the following articles as souvenirs:

(1) Binoculars and compasses, of which our own fighting troops are short.

(2) Many rounds of ammunition (for a German antitank gun) that our own tank designers needed urgently for test purposes.

(3) An electrical gyroscopic compass, also urgently wanted for research.

(4) Enemy tank logbooks giving us valuable information regarding enemy tank production.

(5) Many useful photographs of enemy equipment about which our information was not yet complete.

(6) Valuable items of signal equipment.

(7) Specimens of Axis food which would have provided useful clues for our blockade authorities.

(8) Many types of fuzes, or igniters, and detonators, some of which were new to us and all of which were helpful in some way.

(9) Italian shoulder straps and a German football jersey with a badge, which gave us valuable identifications, including the fact that a new unit had been formed.

¹ These statements by the British regarding captured documents and equipment are equally applicable to our own troops. See that all enemy documents and matériel get to your commanding officer for inspection. Should you desire any of these items as souvenirs, make arrangements with your commander for them to be returned to you after they have served their purpose.

Section II. BRITISH TRAINING FOR SPECIAL DUTIES

1. INTRODUCTION

A discussion of the methods of maintaining direction, largely based on a lecture given by Maj. Lord Lovat of the British Commando School, appeared in *Intelligence Bulletin* No. 4, for December, 1942. Extracts from Major Lovat's lectures to the Commando School on "Scouts and Observers," "Ambushes," "Street Fighting," and "Woodcraft and Bivouac" appear below. Although his views do not necessarily represent official British doctrine, they are reprinted here as a matter of fundamental interest to American troops.

2. SCOUTS AND OBSERVERS

The importance of maintaining observation superior to that of the enemy cannot be overemphasized. In this connection it is the duty of scouts and observers, who are highly trained specialists, to supply their commanders with information which cannot in the normal way be provided by other troops. These specialists must be able to obtain accurate information under all conditions of

warfare, and in all kinds of terrain, with or without the aid of maps, field glasses, or other instruments. "No Man's Land," whether it is 100 yards or 100 miles wide, must be kept under continuous observation and regarded as a network through which no piece of information, however small, should be allowed to escape.

Although scouts must have a knowledge of the organization and work of other arms—especially of the infantry—they should be expert at the following special activities:

- a.* Using field glasses for long-range observation.
- b.* All map reading.
- c.* Writing reports and messages; keeping logbooks.
- d.* Taking bearings; using the prismatic compass.
- e.* Patrolling long distances by day and by night.
- f.* Fieldcraft, stalking, concealment, and living off the land.
- g.* Bivouacking; personal care in the field.
- h.* Planning, constructing, and manning observation posts.
- i.* Use and care of arms.
- j.* Identification of troops, both friendly and hostile.

In addition, it is desirable for a scout to be competent at evaluating air photographs, executing field sketching and plans, and performing first aid. He should also be able to ride a horse, drive a motorcycle, sail a boat, swim, and cook.

There are numerous roles in which scouts are invaluable, including:

- a.* Patrolling, observing in small detachments, sniping, and verbal reporting.
- b.* Penetrating enemy lines and working inside them.
- c.* Moving skillfully and silently over difficult country at night.
- d.* Constructing field defenses and erecting obstacles.
- e.* Executing demolitions and sabotage.

Scouts and observers not only must be physically fit, but must have 100 percent self-confidence. There are more occasions in

their work when they need a cool hand, a clear eye, and a quick imagination than in any other branch of the military service.

3. AMBUSHES

a. General

In guerrilla warfare it is always necessary to be on the look-out for opportunities to surprise the enemy, and to attack him when and where he least expects it. Ambushing him whenever possible will make him respect you a great deal, especially if you can get away without losing any of your own men.

b. Choosing a Locality

In choosing a locality, it is necessary to take the following requirements into account:

(1) A safe, sure line of retreat, such as wooded or broken ground, for all men in the ambush.

(2) Firing positions from which fire can be opened at point-blank range. It may be helpful to let the men prepare their own positions with rocks or sandbags, but this must not be allowed if there is any real likelihood that air or ground observers will detect the positions.

(3) The locality should provide at least two firing positions; very often it is better if these are on opposite sides of a road.

(4) If possible, the locality should permit the ambush to see the enemy while he is as much as 300 or 400 yards away, so that if his strength is dangerously superior, he can be allowed to pass.

c. Planning

Having found out by what routes enemy patrols or small detachments are accustomed to move, it is necessary to obtain the fullest possible answers to the following questions:

(1) Do the enemy patrols move on foot, by motor transport, or mounted?

(2) What is the average strength? How armed? How many vehicles?

(3) Do they patrol in armored cars or tanks?

(4) At what time do they use the routes?

(5) How do they move? In one block? Or do they have protective detachments out in front or rear? Do the detachments move far from the main body?

(6) How will they summon assistance when attacked? From what point can they get assistance most easily?

(7) If the enemy carries supplies, can they be used if captured? If they cannot be used, can they be destroyed easily?

(8) What sort of troops are they? Young or old? Trained or untrained? Alert or careless? Can the officers and noncoms be picked out readily, and killed by the first volley?

d. Action

Having found out as much information as possible, and having chosen the locality, it is advisable to make a detailed reconnaissance of the position. If it is impossible to take the entire ambushing force to the place, the next best procedure is to make a sand model of it and of the surrounding country. Every man should be shown where he is to go. When this is physically impossible, the noncoms should at least be shown where they are to place their sections.

(1) Keep the whole operation as secret as possible.

(2) Almost invariably, the preliminary movements from camp or base must be made in the dark, and the actual taking up of positions must be done in the dark, too.

(3) Sentries must be posted to give warning of the enemy's approach. If possible, make use of a local man or woman who need not remain concealed.

(4) Adopt a simple signaling system.

(5) If the enemy detachment has scouts out in front, these must be allowed to pass unobserved. If one or two men are

posted farther up the road to deal with them, the scouts must not be touched until the main attack has begun.

(6) The leader of the ambush will give the command to open fire. Fire must be rapid, so as to have an immediate, overwhelming effect.

(7) A few of the ambush's best shots should be selected beforehand to dispose of enemy officers and noncoms.

(8) If vehicles are to be destroyed, men must be detailed beforehand for this work. The remainder must remain concealed to deal with any reinforcements or with enemy troops hiding in trucks.

(9) When the ambush is scheduled as a night operation, take along as many Very pistols as possible, and use them liberally as soon as the fighting starts.

(10) Movement should be as silent as possible; for this reason, all troops should be equipped with rubber-soled shoes or rubber boots, if available.

(11) Remember that soldiers will usually face the direction from which hostile fire comes. It is useful for an ambush to be divided into two distinct groups; one of these can fire first, and the other can then fire on the enemy from his rear.

(12) When using light machine guns for your ambush, place them so that they fire directly along the track.

(13) At the beginning of hostilities, road blocks are useful for halting convoys abruptly. In later actions the enemy will suspect road blocks of indicating the presence of troops in ambush; under these circumstances, various types of land mines, expertly hidden, will be more effective.

(14) It is most important for sentries to remain in position until the order to retire is given.

(15) All wounded men should be removed; ponies or mules are useful for this.

(16) If the ambush is successful, take away or destroy all matériel on the scene. All papers should be taken for examination. Search the dead for anything that may be useful.

(17) When the withdrawal has begun, it should be completed as fast as possible, with the ambush group dispersing to meet again at a place designated before the beginning of the operation.

4. STREET FIGHTING

It sometimes happens that one or more unattached companies are ordered to surprise and occupy a town or village which is in the hands of an enemy garrison, and to hold it for a limited period. Not only surprise but speed is essential in such an action. If the enemy has any warning of the attack, he will quickly try to turn almost every house into a fortress. In this case an unattached company, lacking artillery and air support, will find it costly, if not impossible, to turn out the enemy. The greatest care in planning and the utmost secrecy are therefore necessary.

At the beginning of the attack, troops should advance in single file along both sides of the street, keeping close to the walls and maintaining intervals of about 3 yards between men. Each file will watch the windows and doorways of the houses opposite, and be prepared to engage enemy snipers. It may also be convenient to place a Bren gun on each corner at the end of the street to give effective supporting fire. When movement along the roofs of the houses is possible, snipers selected for their agility and marksmanship should be sent up to the roofs to support the advance that is taking place in the street.

A doorway leading into a house, or into a room, must never be approached directly from the front. It is best to approach it from one side, hugging the wall, and then to hurl one or two hand grenades through the doorway. Immediately after the explosion, the attacker should enter, with his pistol (or rifle) ready for firing. Even if the defenders are not killed or wounded by the gre-

grenades, there is a good chance that they will be knocked out—for a few seconds, at least.

A strongly defended house will have to be taken floor by floor, or even room by room—hence the danger of allowing the enemy to organize any resistance. Once a house has been entered, and fighting is in progress on the upper floors, the attackers should post one or two men on the ground floor to watch the street and guard against surprise.

The best way to deal with strong resistance in houses is to work around the flanks and toward the rear, and thus enclose the defended localities in a number of small pockets which can be reduced one by one. Three-inch and two-inch trench mortars are most effective in street fighting, because of their extreme accuracy and the demoralizing effect of their grenades and their rapidity of fire. They are especially useful against strong barricades.

Once the attack has been launched, the enemy must be kept on the run and deprived of any opportunity in which to rally and organize his resistance. All the attackers must be trained to display the greatest initiative, since the slightest hesitation may prove fatal to the whole operation. Subordinate commanders, in particular, must combine a dare-devil recklessness with a cool head. In this type of warfare, the motto is "Hit first, hit hard, and keep hitting!"

Finally, it must be emphasized that a small attacking force cannot afford to take prisoners in the course of street fighting. It is too easy for the prisoners to escape and, once having escaped, to harass the attackers. Furthermore, men cannot be spared to serve as escorts.

5. WOODCRAFT AND BIVOUAC

a. General

Woodcraft is the art of making the most of the natural physical features of a countryside, so that one may work and live in com-

parative comfort. The object of using woodcraft in bivouacking is not so much to "rough it" as to "smooth it."

The following are useful articles to carry: rifle, scissors, needle, thread, buttons, safety pins, rubber bands, strong cord, copper wire, adhesive tape, nails and tacks, waterproof matches (see subpar. *d*), flashlight, emergency rations, and first-aid supplies.

b. Bivouac Site

A good bivouac site should provide water, fuel, dry and level ground, concealment from ground and air observation, a covered line of approach and retreat, security against surprise attack, and security against spread of fire. Old camp sites should be avoided, because they may harbor disease and because the best fuel will have been used up. Do not choose the lowest part of the available ground; rain may make it uninhabitable.

Choose the sheltered side of a rock or fallen tree; if there is a gap between the tree and ground, block it with stones or earth.

A good windproof and snowproof shelter can be constructed by laying branches with one end on the ground and toward the wind and the other against a pole supported by two stout stakes about 3 feet high. The branches should slope at an angle of more than 45°.

c. Bed

Earth draws heat out of the human body; therefore, one must have more protection underneath than on top (the greenhorn is usually unaware of this fact). A sleeping bag for two men can be made of blankets temporarily sewn together on three sides. To keep the feet warm on cold nights, it may be worthwhile to fill a sack or sandbag with hay or straw, place the feet inside, work the straw around the feet, and tie the sack at the knees.

If it is possible to have a camp fire without risk of enemy observation or danger of the fire spreading, it is an excellent idea to spread fuel over the place selected for bivouac and then burn

out the ground. This makes a warm bed, since heat is not drawn from the body, but is given out from the ground.

d. Campfires

If the ground is dry, a trench for the campfire should be dug in line with the wind.

Hard woods are best for cooking; they burn slowly and do not give too much heat. Soft woods burn quickly; although they are good for lighting fires, they generally give off sparks. If possible, always use dead branches taken from the lower part of a tree, or dead wood which is not too moist from lying on the ground. If a fire smokes, give it more air.

The waterproof matches (mentioned in subparagraph a) are useful and easy to make. Dip ordinary matches in shellac and lay them out to dry. They should be struck only in an emergency, when the supply of regular matches is damp. Sometimes it is possible to dry matches satisfactorily by rubbing them through hair.

To light a fire without matches, assemble very small dry shavings, remove a bullet from its case, tip out some (but not all) of the powder from the cartridge case onto the shavings, insert a small piece of frayed cotton rag into the case, and fire the cartridge into the air. The rag should catch fire, and must be applied to the shavings at once. It is important to remember that bone-dry shavings are likely to be found in dead birch trees. Always make certain that fires are out before your departure.

e. Important Note

It is absolutely essential, in bivouac, to place all articles so that they may be assembled quickly and moved during the night, if an unexpected need arises.

Section III. MISCELLANEOUS

1. STEEL HELMETS AND HEAD WOUNDS

Of special interest to American troops is a study recently completed by the commanding officer of a British medical unit in the Middle East. The officer has examined 150 consecutive cases of localized skull fractures sustained during battle, more than 90 percent of which occurred in the Western Desert, and has demonstrated the following points:

a. That a considerable area of the skull is not protected by the British (old type U. S.) steel helmet from missiles moving horizontally or upward.

b. That severe wounds of this unprotected area are common. The medical officer was unable to secure accurate data as to how many of the 150 casualties were wearing a steel helmet when injured; the available figures suggest that not more than half were wearing their helmets.

Herewith is a composite sketch (fig. 4) based on radiographic observations of the 150 fractures, considered in relation to the areas covered by the British steel helmet, by a proposed British helmet, and by the U. S. helmet

M1. In this sketch, black dots show the positions of the fractures. It can be observed that of the 150 cases, 65 wounds are below the brim of the British steel helmet, whereas 85 are above. There are no skull wounds be-

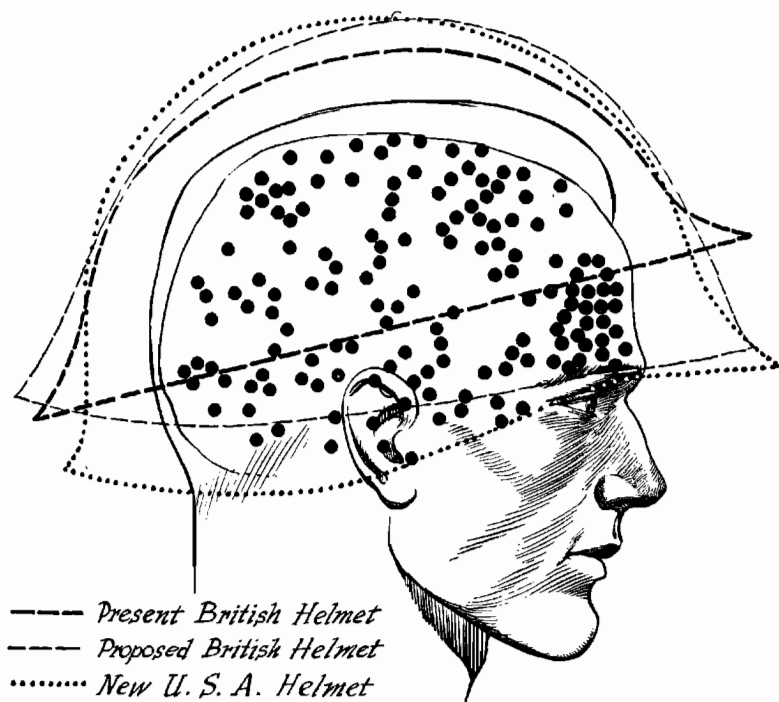


Figure 4.—Steel Helmets and Head Wounds.

low the brim of the U. S. steel helmet. The heavy concentration of wounds in the forehead is worth noting.

The proportion of casualties in this series produced by high-velocity missiles (bullets) has not been determined, but it is common knowledge that not more than

10 percent of casualties with head wounds caused by high-velocity missiles live to reach the base. Fragments extracted from these cases indicate that the majority were caused by low-velocity missiles (grenade or shell fragments). These fragments usually remain within the cranium as foreign bodies. This indicates that one thickness of the skull stopped the missile; therefore, it is reasonable to assume that one thickness of a steel helmet will stop such a fragment before it injures the brain.

An additional point of interest is that a high proportion of fragments that produce head injuries travel in a horizontal or slightly inclined trajectory. Examples of such fragments are those caused by bomb burst, mortar burst, or high-explosive shells bursting on contact with the ground. Very few head injuries result from air bursts.

The American medical officer who reports the results of this study adds the following comment: "This series of cases, which are the result of actual warfare, supports the wisdom of those officers who designed the present U. S. Army steel helmet M1."

2. BRITISH NICKNAMES OF TANKS

a. British Tanks

<i>Nickname</i>	<i>Official designation</i>	<i>Characteristics</i>
Matilda (medium)-----	Infantry Mk. II-----	Heavily armored, slow, used with infantry for attacking prepared positions.
Valentine (medium)-----	Infantry Mk. III-----	
Churchill (heavy)-----	Infantry Mk. IV-----	40-mm gun, fast, long-range; standard tank of armored divisions.
Covenanter (medium)-----	Cruiser Mk. V-----	
Crusader (medium)-----	Cruiser Mk. VI-----	
Tetrarch-----	Light Tank Mk. VII-----	Used with airborne forces and for mountain warfare, reconnaissance, and protection of airdromes.
Harry Hopkins-----	Light Tank Mk. VIII-----	

b. American Tanks

General Lee-----	Medium M3 with U. S. turret.	
General Stuart-----	Light M3-----	
General Grant-----	Medium M3 with British turret.	
Ram I-----	Canadian-built-----	Same as U. S. Medium M3, except that 2-pounder replaces 37-mm gun in turret.
Ram II-----	Canadian-built-----	Same as U. S. Medium M3, except that 6-pounder replaces 37-mm gun in turret.
General Sherman-----	Medium M4-----	

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MILITARY INTELLIGENCE SERVICE
WAR DEPARTMENT

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Section I. GERMAN COMBAT IN WOODS

1. INTRODUCTION

The following German document summarizes lessons learned by the German Army in Russia, with regard to combat in wooded terrain. It is of special interest to American troops, inasmuch as the Germans may reasonably be expected to utilize these lessons in other theaters in which large woods, often swampy and thick with underbrush, are to be found.

2. THE DOCUMENT

a. Principles of Leadership

(1) Wooded terrain often enables us [German forces] to advance within assault distance of the enemy, to bring up reserves, and to shift forces to the critical point of attack (*Schwerpunkt*). Wooded terrain also is favorable for coming to close grips with enemy tanks.

In woods, it is practicable to seize the initiative against an enemy who is superior in heavy weapons, artillery, and tanks. By using surprise attacks, it is possible to annihilate such an enemy, or at least to maintain a successful defense against him.

(2) Difficulty of movement through wooded terrain, and of observation over it, demands that heavy weapons and artillery be attached to the combat units they are to support.

(3) In woods fighting, observation difficulties and a general lack of knowledge of the situation call for courage, tenacity, and the ability to make quick decisions. Mobility, coupled with alert, cunning leadership on the part of all commanders, can play a decisive role.

(4) In this type of combat, everything depends on the concentrated energetic employment of the infantry strength with a view to annihilating the enemy. Systematic fire preparations and the development of protecting barrages are seldom possible. Also, there will usually be many blind spots in defensive fires.

Therefore, the number of rifles and machine guns is often the decisive factor in woods fighting.

(5) Surprise is even more important in woods fighting than in combat in open terrain. For this reason, woods fighting demands, above everything else, careful planning and silence during all movements.

(6) In woods fighting, the necessity for sending out strong patrols to the front, flanks, and rear can lead to a dangerous scattering of strength. In situations where there is danger of being cut off or surrounded, it is generally preferable for the commander to hold his strength together. Such situations arise frequently, especially with small units. This must not lead to hurried or ill-advised measures, or to panic. Caution, determination, and skillful employment of available forces will generally permit offensive actions in which the enemy can be defeated or annihilated.

(7) Movement and combat in woods demand formations in depth. This facilitates control of the forces, mobility of leadership, rapid transmission of orders, and readiness to deliver fire quickly when a flank is in danger.

(8) An advance based on gaining one intermediate objective after another, and on reorganizing the units after each objective has been reached, protects against surprise and makes control easier.

(9) To coordinate the effort in woods fighting, the commander must formulate a detailed plan of operation, and must give each subordinate unit a definite mission. Often he must prescribe in detail how the mission of a subordinate unit is to be accomplished.

(10) Combat in extensive woods, especially in enveloping movements and in encirclements, often consists of a series of small fights. The individual assault groups must act as a coordinated whole, despite difficulties in the transmission of orders and in communications between units. Commanders of participating units must understand both the mission and the situation.

(11) Any commander who is forced by the situation or the terrain to depart from the prescribed plan of operation must obtain beforehand the approval of his higher commander. This is necessary so that the latter can coordinate the proposed action with that of other units in the woods, and above all with the fire of the heavy infantry weapons, the artillery, and the German Air Force. Such coordination is necessary in order to avoid losses through the operation of friendly supporting fire.

(12) Since the German Air Force is often unable to obtain adequate information about the enemy, and since it is seldom practicable to employ the motorized and armored reconnaissance units on a large scale, the employment of numerous strong scout patrols on foot becomes highly important.

b. Reconnaissance, Observation, Orientation

(1) In operations in wooded terrain, all our [German] troop units must carry out ground reconnaissance continuously to avoid surprise attacks by the enemy.

In general, several patrols operating abreast of each other should be sent out to the front. Other patrols should operate

along the flanks. In this connection, it is important to make the distance between adjacent patrols wide enough to avoid the danger of one patrol being confused by the noises made by a neighboring patrol. In woods with thick underbrush, this distance should be at least 160 yards.

(2) In line with the principle of silent movement, the equipment of patrols must be tested carefully, and anything which creates noise or which is too unwieldy must be left behind. The armament of patrols consists of machine pistols, rifles (if possible, automatic rifles equipped with telescopic sights), and many *Eier* (egg) grenades. Since the ear must be constantly alert, the steel helmet may be left behind.

(3) Patrols should obtain information which will answer such questions as the following: Where is the enemy, or where is he believed to be? Where are his left and right flanks? Where are his advance security elements? What are the habits of his patrols? Where are his fields of fire?

If contact with the enemy is effected, it is desirable to obtain early information regarding gaps or weak points in his positions. This provides a basis for quick tactical decisions by the commander.

It is especially necessary for reconnaissance missions to obtain information regarding existing roads, paths, and clearings; ditches, streams, and bridges; and such characteristics of woods as the thickness of underbrush, the height of trees, the location of high or low ground, and the location of swamps.

(4) The commanders of companies, platoons, sections, and squads must always detail special lookouts to protect against snipers in trees. Individuals who spot tree snipers are to dispose of them by aimed rifle fire. Sweeping the treetops with machine-gun fire will be resorted to only in cases where the enemy snipers cannot be located definitely.

(5) During halts, observation from treetops is profitable.

(6) Patrols in the woods must carefully observe paths and trails. Important conclusions concerning the position of the enemy can be drawn from the location and condition of these trails. It is important to note whether or not a trail has been used recently. One way of judging this is to inspect the morning dew for any unnatural disturbance.

(7) If there is no terrain feature on which the patrol can orient itself, the compass must be used. Each patrol must carry at least two compasses, one for the leader and one for his second-in-command. The leader is in front; the second-in-command brings up the rear, guarding against any deviation from the proper course.

c. On the March

(1) Our [German] troops must be prepared to erect short, strong bridges and to lay corduroy roads. Engineers must be placed well forward to clear the way and to remove obstacles. Also, many road-working details must be provided to assure mobility for all units.

(2) When paths and roads through swampy woods must be used, it is especially desirable to employ local inhabitants as guides. Routes of this type often are not shown on maps.

(3) In woods fighting, the increased length of time required for bringing forward various elements from the rear demands that the advance guard be made very strong. Heavy weapons and artillery, staffs, and signal detachments are to be placed well toward the front.

(4) All elements of the column must be prepared for instantaneous defensive action, and must expect surprise attacks against flanks and rear.

(5) As a rule, flank guards and rear guards must be used. The flank guards must be able to leave the roads and move across country. The strength of the flank guards, as well as the interval between them and the main body, depends on the strength of the

main body, the character of the woods, and above all on the character of the roadnets. Lest the flank guards be cut off and destroyed, they must guard against operating too far from the main body.

(6) It is necessary to include, in all echelons of the column, detachments which have the mission of searching for enemy tanks.

(7) Strong air attacks, artillery fire, attacks by guerrillas, or attacks by enemy troop units may make it necessary to conduct the march off the roads while passing through woods.

(8) In clearing road blocks rapidly, it is advisable to attack the blocks frontally with fire delivered from units on each side of the road. This fire will pin the defenders to the ground. Meanwhile, other elements of the attacking force should envelop the road block from the rear.

d. Approaching the Enemy

(1) When our [German] reconnaissance has indicated that enemy resistance is to be expected on the route of march, and when contact with the enemy seems near at hand, it is often wise to abandon the march on the road fairly early, in order to gain surprise and launch an attack from a direction that is tactically favorable.

(2) If the woods are thin, the advance formation can be loose, with wide intervals. If the woods are thick and relatively impassable, the troops must be held close together, echeloned in depth.

(3) Units should move by bounds when advancing through woods. Orders issued in ample time should specify the successive objectives. These must be clearly defined features, such as roads, paths, creeks, and so on. After reaching an objective, the unit must halt long enough to reorganize and re-orient itself, to let the heavy weapons and artillery weapons catch up, and to take new security measures.

(4) It has proved a good idea to provide special close-in security elements between the main body and the normal security elements. The special elements consist of small groups of infantry, equipped with close-combat weapons—especially machine pistols.

The main body advances in deep formation, with security to the flanks and rear, as described above.

Mortars, antitank guns, and heavy infantry weapons should be placed well forward, immediately behind the leading infantry. This is done so that unexpected enemy resistance can be broken at once by heavy fire.

(5) Short halts should be called on reaching clearings, roads, and paths, and on leaving the cover of woods. Machine guns and heavy infantry weapons are brought up to cover an advance across open land. Patrols move through the woods to the right and left, so as to reconnoiter the edge of the woods on the opposite side of the clearing. When the advance is resumed, the open clearing is to be avoided even if the edge of the opposite woods is reported to be free of the enemy. Clearings which cannot be avoided are to be crossed in swift bounds.

(6) When German troops are within sight and range of the enemy, further advance is made by creeping and crawling so as to come within close combat distance. Even under strong enemy fire, creeping and crawling through woods can be accomplished successfully.

e. Attack (General)

(1) To achieve surprise, we [German forces] should employ all available weapons so that the enemy will be deceived as to our plan and strength and as to the time and place of our attack. Feint attacks may be made in the woods with weak forces. Noise alone may serve the purpose. These measures confuse the enemy, tempt him to employ his reserves prematurely, and therefore weaken his power of resistance. If possible, the attack should

be made so that the enemy is enveloped from both flanks, or at least struck in one flank.

(An enveloping attack by the enemy can best be repulsed through the employment of forces brought up from the rear.)

(2) In thick woods, natural features which run perpendicular to the direction of the attack serve well as objectives. The stronger the expected enemy resistance, the shorter must be the distances between objectives.

(3) Surprise will be obtained chiefly by the manner in which fire is opened. Generally, the commander himself will give the order to open fire. Fire must be coordinated and delivered in short, heavy bursts; this has a useful psychological effect in the woods.

(4) The fire of the defender, which normally strikes the attacker at very short ranges, must be traversed rapidly, regardless of consequences. Experience has shown that this method results in fewer losses than if the attacker goes into position and overcomes the defender by fire power.

(5) In general, it is pointless to deliver fire on the enemy after he has abandoned his position. Through rapid, determined pursuit, he must be prevented from reorganizing and gaining time to launch a counterattack. However, if fighting has been heavy and has involved much man-to-man action, it is profitable to halt briefly after the enemy collapses so that we can reorganize and concentrate our strength.

(6) Since trees and underbrush reduce the effect of individual rounds, woods fighting calls for the use of more ammunition than does combat in open terrain. Therefore, the problem of ammunition supply requires special consideration.

(7) In woods it is usually impossible to carry on an attack after nightfall. For this reason, troops must break off the fighting in ample time to organize a defensive position for the night.

f. Attack against a Weak Enemy

(1) We [German forces] are most likely to succeed in an attack against a weak enemy if our approach is noiseless, and if the assault is launched from the closest possible distance on either enemy flank.

(2) When our patrols have developed the possibilities for an envelopment, troops are brought up from the rear. While they envelop the enemy flanks and rear, our forward elements attack energetically to the front.

Frequently the patrols sent out to locate the enemy flanks, or the messengers sent back by these patrols, can serve as guides for our enveloping forces.

The units assigned to the enveloping force will be controlled by their leaders through prearranged sound signals.

The attacking elements in front of the enemy positions open fire and launch their attack, with battle cries and with bugles blaring "the charge."

(3) In general, the commander belongs with the elements attacking to the front, since this enables him to judge the situation and make decisions regarding the employment of rear elements.

g. Attack against a Strong Enemy

(1) This type of attack follows our [German] principles of attack against organized positions. Assault detachments are formed, equipped with such weapons of close combat as hand grenades, smoke grenades, and Molotov cocktails. Flame throwers are especially effective in the woods.

(2) Assault detachments seek out the weak points in the enemy position, and try first to effect a small breach. If the woods are thick, and if gaps in the enemy positions are discovered, it is advisable to infiltrate silently into the position with small detachments. These detachments attack enemy centers of resistance and security posts, annihilate them, and attempt to throw

the enemy into confusion. They prepare the way for the attack by the main body.

(3) Woods often prevent the opposition from detecting our advance. This makes possible the assembly of our attacking force at points closest to the enemy position, especially just before dawn.

(4) A sudden and determined surprise attack without preparation by fire is usually more effective than an attack preceded by fire preparation.

(5) The fields of fire prepared by the enemy must be avoided. Machine guns, antitank guns, and individual artillery pieces must be brought into position in these fields of fire and must silence the enemy guns.

(6) The spearhead of our attack must penetrate deep into the enemy position, despite all difficulties and lack of observation. The rear elements of the attacking force widen the penetration and mop up the position.

h. Support by Heavy Infantry Weapons and Artillery

(1) Since the ranges are usually very short, our [German] heavy machine guns will often be employed in the role of light machine guns. Light machine guns may be brought into action rapidly, and may be shifted from position to position very readily. Ammunition supply vehicles are brought forward by bounds.

Heavy infantry mortars are attached to the heavy infantry platoons. Use of smoke shells during siting has often proved profitable. Care must be taken to insure that the trajectory of the mortar shell will not be blocked by trees or foliage.

The mobility of light infantry weapons and light antitank guns makes them extremely useful; they will normally be attached to the infantry companies and will be employed in direct firing.

The use of armor-piercing shells by antitank guns is effective against targets of all kinds, since these shells are not easily deflected by trees or foliage. On the other hand, our "hollow-

head" shell (*Hohlkopfgeschosse*) is less successful, because it is sensitive and explodes prematurely when it strikes a tree or bush.

(2) Because of observation difficulties in the woods, our artillery is likely to have great trouble with shells falling short of enemy positions.

Many advance observers must be attached to the leading companies. Whenever observation is possible, fire must be opened suddenly.

The laying of telephone wire takes time. Therefore, reconnaissance units with the leading elements must be equipped with other means of communication, preferably radio.

In favorable terrain it is often possible to make use of observation from high points outside the wood. Flares are used as signals between the observer and the infantry commander to indicate the location of the leading elements, to define the targets, and to control the fire.

To match the advance of the infantry, artillery fire is moved from objective to objective. Certain phase lines will be prescribed, and fire will be directed on these at the infantry's request. Short violent salvos are especially effective.

i. Mopping Up a Woods

(1) When we [German forces] attempt a rapid mopping up of a woods, we normally succeed only through the employment of forces moving in different directions to surround the enemy.

(2) The mopping up of woods by the "combing" method—in which our troops advance in a line along a broad front, with only a few yards between the individual soldiers—has proved ineffective. There is always a danger that the enemy will concentrate his forces at a given point and break through our own line. Therefore, we must keep our forces concentrated and, according to the situation, direct strong and compact assault detachments along the roads and paths—with all movement following a carefully prepared plan.

(3) To forestall enemy attempts to break out of the woods, we must cover the edges of the woods with infantry weapons and artillery, and must employ tanks and self-propelled artillery.

(4) Against an encircled enemy, harrassing fire in ever-increasing density and the employment of air power are especially effective.

Advance observers, attached to the assault detachments and equipped with individual radio sets, can direct the artillery fire and the air bombing so that there will be no danger to our own troops.

j. Defense

(1) When defending in a woods, the danger from surprise attacks is increased. We [German forces] must not wait until the enemy, taking advantage of the abundant cover, launches an attack from the immediate vicinity. We must seek out the enemy, attack him, and annihilate him.

(2) Mobility in the defense is the best means for deceiving the enemy as to our own strength and intentions. This mobility often leads to the defeat of a superior enemy force.

(3) It is especially important to build up centers of fire quickly and to employ reserve strength, even in small units, with a view to annihilating the enemy through counterattacks. Heavy infantry weapons, artillery, and reserves must be held close to the point of likely action.

(4) Organization in depth and complete cover of the front by fire are seldom possible, even when strong forces are available.

Woods enable a defender to erect many effective obstacles in great depth. These obstacles will often stop the enemy or canalize his attack in a direction favorable to the defender.

(5) The employment of tank-searching details close to the enemy's best routes for tank approach is highly profitable.

(6) When a complete defensive position cannot be organized due to lack of time or manpower, a continuous strong obstacle

must be erected—and, if possible, many centers of resistance, capable of all-around defense and of holding under fire the enemy's avenues of approach.

(7) The edges of woods normally lie under enemy fire and therefore are not to be occupied. Our weapons must operate from within the woods. If observation permits, they should be at least 30 to 50 yards from the edge.

Each center of resistance must be protected all around by minefields. Within the center of resistance, an adequate supply of hand grenades must always be within reach.

Every effort must be made to clear fields of fire. These must be located so that our fire will strike the attacking enemy's flank.

(8) Camouflage of the position against observation by tree-top observers is essential, but uniformity in the organization of positions and in methods of camouflage must be avoided.

Camouflage screens are to be used at all times. Branches and twigs used for camouflage must be renewed every morning. (Dry or withered foliage will betray even the best-located positions.)

(9) Paths and trails between individual centers of resistance, and to the rear, are to be provided and marked. These paths are necessary for mutual support by adjacent units and for quick employment of reserves.

Paths must be kept free of dry wood and foliage so that the patrols will not be betrayed by crackling and rustling noises. The tendency of soldiers to take short cuts, and therefore to make new paths, must not be tolerated.

Patrols must never operate on regular schedules or by identical paths. The enemy will soon discover the routine and will annihilate careless troops.

(10) Defense in the woods demands the employment of numerous observation posts for the artillery (3 to 4 per battery). For this purpose, signal equipment from the division signal company must be made available. Many heavy barrages must be provided

in front of the main line of resistance, and especially between the gaps in the centers of resistance.

The gun positions of the artillery must be protected against close-in attack. To this end, the position must be surrounded with centers of resistance, especially to the flanks and rear, and with increased numbers of security patrols.

These provisions are especially important in cases where only weak infantry forces are available and where, therefore, the development of the defensive position in great depth is not possible.

(11) Obstacles must be erected in front of every position, especially along rivers and creeks. The enemy may use the latter as avenues of approach. All obstacles must be covered by fire, even if only by patrols. Wire and booby traps are to be used liberally. Alarm devices, which can be made from captured wire and cans partly filled with stones, should be installed in the wire and obstacles in front of a position. The response to alarms should be rapid. Indeed, each commander must realize that speed can be decisive in a counterattack.

(12) Listening posts and standing sentries are to be employed at all favorable approaches to a position. The hour of relief and the place of relief are to be changed frequently.

(13) The laying of telephone lines, even to the smallest advance unit and neighboring units, is important. (Captured matériel will often be useful in this connection.) Wires should be strung through the treetops.

Section II. RECENT DEVELOPMENTS IN GERMAN TACTICS

1. ARTILLERY (NORTH AFRICA)

In increasing their precautions against British counterbattery fire in North Africa, the Germans have resorted to the following tactics:

a. Daytime harassing missions fired from roving gun positions in the open.

b. Adjustments made by using one or two guns sited on a flank of the battalion position.

c. The fire of both light and medium batteries directed into the same area simultaneously so as to make it harder for the opposition to locate these gun positions.

d. As many as six batteries fired at once, so as to confuse the opposition's sound ranging.

2. ARMORED FORCE (RUSSIA)

United Nations observers in Russia report that the German Armored Force has recently used the tactics described below.

a. General Characteristics

All arms cooperate closely. Everything depends upon the success of the tanks, which are used in mass. Reconnaissance of weak points, flanks, and gaps is very carefully performed. Speed is stressed. Orders are very detailed, but local commanders are allowed full scope.

b. Surprise

Surprise is achieved through secrecy, rumors, and false orders. Tanks are maneuvered in an area where the main blow is not to be delivered. Not only real tanks but dummies, mobile and immobile, are kept in evidence at one part of the front, while the main striking force is concealed elsewhere.

c. Psychological Methods

On occasion, paratroops with automatic weapons have been dropped behind the Russian lines at the moment of the tank attack.

Parachutists or motorecyclists try to seize nerve centers.

Troops who succeed in reaching the rear of the Russian defenses use indiscriminate fire in an attempt to disrupt morale.

d. Advance

While the leading detachments go forward, the main body follows in march column. When resistance is met, the leading detachments deploy on a wide front.

Strong reconnaissance units are sent out to the flanks. However, the main body remains in march column.

e. Attack

A spearhead formation is usually employed; that is, motorcyclists and assault weapons go forward. A tank regiment follows, with two battalions up, if the front is expected to be from 1 to 1½ miles wide. Panzer Grenadiers (armored infantry) are deeply echeloned behind these elements. The remaining infantry either advance far to one flank, or remain concentrated in the center, ready to widen any gap that may be made.

f. Avoiding Frontal Attacks

Frontal attacks are always avoided. German tanks have come to respect fire from Russian antitank guns; therefore, if there is a strong antitank defense, the German tanks give up the attack. The Germans then make a show of preparing for a second attack in the same place, while they search the front for spots that are weak in antitank defense.

g. Defense

Defense by German armored forces is very elastic. Towards dusk, detachments of Panzer Grenadiers move forward in front of the main line of resistance to create an impression that the edge of the defensive zone is further forward. The remainder prepare the main line of resistance. A number of tanks are dug in on this line. When the defensive zone prepara-

tions have been completed, most of these tanks withdraw to assembly points in the rear, to prepare for a counterattack; only a few PzKw III's or PzKw IV's remain dug in, to serve as pivots of fire.

3. PROPOSED DEFENSIVE A/T METHODS (RUSSIA)

A German Army document, based on German experiences in defending against Russian tank attacks, includes recommendations for the improvement of defensive methods. These recommendations are contained in the extracts given below.

a. Use of Tanks

We [German forces] should keep our tanks in reserve as far as possible, and use them in close formation against flanks of the Russian tanks as soon as the direction of the attack is clear. Our tanks must always be prepared to act without delay. Previous reconnaissance of covered approaches is necessary. Long-barreled 75-mm and 50-mm pieces have good effect when used from the flank. Concentrated fire must be placed on individual enemy tanks.

b. Use of Antitank Guns

Defiladed gun positions are desirable. Fire should be opened as late as possible. It should be opened even when there seems to be little chance of success; the enemy tank will be impeded and usually will swing away. Antitank guns must be made mobile so that they can be massed at the point where the Russian tanks are attacking. An allotment of half-tracked tractors is essential.

c. Use of Artillery

A well organized warning system and constant readiness to fire must be insured. Individual guns in good condition must be disposed in readiness, preferably 100-mm guns with special *Rotkopf* (red top) ammunition. Gun tractors are necessary in order to transfer guns quickly to the sector threatened by the tank attack.

Antitank defense by 88-mm flak has the advantage of achieving a satisfactory penetration performance against all types of tanks. However, a marked disadvantage of the 88-mm guns is their great height, which makes them quickly recognizable. Also, their positions cannot be changed readily.

d. Use of Infantry

When Russian tank attacks have been accompanied by infantry, our own infantrymen who have allowed themselves to be overrun in their positions have had great success against the Russian infantry following up behind. Our troops who have dug themselves in well have suffered very few casualties, whereas companies which have abandoned their positions have had much greater losses. For this reason it is essential to dig in deeply and quickly, using every possible means. Above all, troops should remain in the positions and allow the enemy tanks to go past. All centers of resistance must be equipped with Molotov cocktails, explosives (prepared charges and antitank mines), and, if possible, with flame throwers.

4. STATIC DEFENSES (NORTH AFRICA)

The German defenses of the coastal town of Bardia consisted, wherever the ground was suitable for armored force vehicles, of an antitank ditch 3 feet deep and 6 feet across, with an especially steep slope on the side that the British tanks would approach. A short

distance from the ditch, and nearer Bardia, was a wire fence, consisting of a double line or a double apron on wooden posts—in either case, approximately 3 yards deep. This ditch and fence combination described an arc around Bardia. Between the fence and the town itself, there was a series of 83 strongpoints about 500 yards to 800 yards apart—describing still another arc. As a rule, antitank mines were laid on the British side of the ditch, although sometimes the mines were laid between the ditch and wire.

Each strongpoint was wired in and, except where the terrain was naturally unsuited to tank use, surrounded by an antitank trap. The strongpoints, which were made of concrete, were semicircular in shape with an opening at the rear, and consisted of 3 to 5 positions for automatic weapons. In most instances the tank trap surrounding a strongpoint was a ditch 9 feet across. The ditch had a steep slope and a concrete lip on the side that the British tanks would approach, while the other side was faced with stone and had a concrete lip. The entire ditch was covered with thin ($\frac{1}{4}$ inch) lath planking, which in turn was camouflaged with dust and pebbles. The tank traps were sited within hand-grenade range of the positions. Artillery defense was lacking in depth. Reserve positions consisted of low stone walls, or boulders grouped around a natural hollow.

5. DEFENSIVE RUSES (NORTH AFRICA)

a. In North Africa, the Germans have repeatedly attempted to attract the attention of British patrols by unnecessarily loud talking and whistling, as well as by rattling tin cans and tools. While this is going on, German patrols try to outflank the British patrols.

b. A British patrol in the El Alamein area found that the Germans had hung bells on wire obstacles, to serve as an alarm device. (Note subparagraph 2j (11) of "German Combat in Woods," page 14.)

c. Booby traps have been found attached to concertina wire fences, to give warning of the approach of British patrols. Although few details are available, it appears that the explosions caused by these traps were not very great. It has been suggested that the traps may have consisted of *Eier* (egg) grenades with the screw caps removed and the igniter strings tied to the wire fence. This type of booby trap has been found in connection with abandoned vehicles.

For a device of this kind to work satisfactorily, it would be essential for the body of the grenade to be secured firmly. The standard igniter for the grenade has a delay of about 4½ seconds. The effect of the "egg" grenade is mostly blast.

Section III. GERMAN AIR FORCES

1. TACTICS AGAINST GROUND TROOPS

German air attacks against ground troops consist primarily of two types of action—low altitude strafing and dive bombing—and are usually made by air units closely supporting an infantry or armored force. Their chief purpose is to hinder troop movements and destroy communications, thus preventing effective reinforcement and deployment of opposing troops. That the Germans have attached an increased importance to such raids is shown by the fact that special ground-attack units (*Schlachtgeschwader*) were organized during 1942, equipped principally with the new Hs 129, an aircraft designed especially as a tank destroyer and antipersonnel weapon.

Dive bombers have been employed extensively against ground troops and fixed defensive positions, often producing panic among troops who were facing them for the first time. Troop movements have been critically hampered by accurate bombing attacks on strategic roads and crossroads, followed by strafing of personnel. Primary objectives of dive bombers, coop-

erating with ground forces, are the opposition's lines of communication, which are systematically attacked to disrupt movements of any kind, and to prevent effective counterattacks.

The Germans believe that a patrol of four planes is the most effective ground-attack unit, since it is both maneuverable and sufficiently strong to neutralize such targets as artillery positions and small columns of troops. The number of such dive-bomber units normally employed on one raid has been 8 to 10 (30 to 40 aircraft); these are escorted by about 10 fighters flying 1,000 to 2,000 feet above them. Formations approach at 14,000 to 17,000 feet in the sun. When they are near the target, they descend to about 6,000 feet. From this altitude they dive at a steep angle, one after another.

Bombs are released during the pull-out, at altitudes of approximately 250 to 500 feet. The leader drops his bombs at about 300 feet; the others, at 300 to 500 feet. Usually each aircraft releases one large (550 lb.) and two or four small (110 lb.) bombs. The bombs form no pattern, and the large bomb usually overshoots the small ones, all generally falling within 50 to 150 yards of the target.

If anti-aircraft fire is intense, aircraft fly in staggered formation, maintaining extended intervals. Since very few aircraft will dive through intense anti-aircraft fire, the bombs are usually released above the barrage, with consequent loss of accuracy and dimin-

ished effect. On strongly defended positions, only one run over the target is made per sortie.

If antiaircraft fire is light, dive bombers often fly four in a single line. When they reach the objective, all attack the same target, or else the formation separates into pairs, each of which attacks a previously designated target. The pairs also may subdivide, and dive on the assigned target from different directions. They may repeat the attack if all bombs were not released during the first dive. In this case they climb in a big arc to dive again.

Most of the dive bombers shot down by ground defenses are hit by light antiaircraft guns just as the planes are pulling out of their dives. Since at that time the entire belly of an aircraft is exposed to fire, the pull-out is the bomber's moment of greatest vulnerability. Although aircraft have been engaged by artillery during the actual dive, very few hits have been scored. However, the bombers have been forced to take evasive action, thus making accurate bombing impossible.

The effect of small-arms fire on the morale of pilots is considerable. Ground-attack aircraft undoubtedly have been hit by it, and tracer or armor-piercing ammunition, fired from the ground at close range, has a deterring effect. However, low-flying raids have been very successful, both against troops and lightly armored vehicles. Bomb splinters have been known to penetrate armored cars from 30 yards. If the driver's flap or the

car doors have been carelessly left open, "near misses" may also cause damage.

Attacks by cannon-firing aircraft are carried out at an angle varying from 20 to 70 degrees, depending on the type of target. No particular part of an armored vehicle seems to be aimed at, but roofs are hit less often than are other parts of the vehicles. Pilots open fire at about 200 yards, continuing to fire until they are past the target. Although high-explosive, armor-piercing high-explosive, armor-piercing, and incendiary ammunition are used, the belt loading is 75 percent armor-piercing when the aircraft is to attack armored vehicles.

Units created for ground attack have been equipped chiefly with the Hs 129, built with special protection for this type of attack. The heavily armored cockpit makes action possible at low altitudes. These aircraft take off in echelon, by sections, flying to the target in close echelon formation if there is danger of attack by enemy fighters. They avoid antiaircraft defenses as much as possible by using cloud cover (if it exists), by approaching from the sun, and by changing course frequently. The attack is made by individual sections of the unit. While one section is attacking, another is moving away from the target, and the third is approaching it. Each section flies in close formation, diving directly at the target at about a 45-degree angle. When leaving the objective, the planes fly in line ahead or in echelon formation, strafing the area as they depart.

Fragmentation bombs are dropped on a target from an altitude of 60 to 100 feet during the pull-out. After the bombs are released, the guns are fired at the target. In place of bombs, the aircraft may mount the Mk 101 30-mm cannon, which is for use against tanks and armored cars.

As in the case of dive bombers, all operations by ground-attack aircraft are usually escorted by fighters. The method of escort depends on the number and type of enemy fighters which are likely to be encountered en route to, or in the vicinity of, the objective.

It must be emphasized again that the weakness of attack aviation lies in the vulnerability of low-flying aircraft to rifle and machine-gun fire.

2. FLYING DISCIPLINE

German Air Force documents have been stressing the necessity of dealing harshly with breaches of flying discipline. A communication signed by Marshal Goering himself lists such cases under the following headings:

a. Arbitrary deviation from a prescribed mission for the purpose of so-called "visits" to acquaintances and relatives, involving departure from the prescribed flying height.

b. Arbitrary low-level attacks.

c. Arbitrary acrobatics below 3,300 feet.

d. Arbitrary low flying.

e. Every other type of flying that endangers the aircraft or its occupants.

Goering sternly reminds all personnel of the great value of discipline, and of the heavy burdens that are being placed on the German people in order to maintain the Luftwaffe as a strong, well equipped force. He threatens the severest punishment for all frivolous and thoughtless behavior which in any way threatens to weaken the striking power of the service.

Other Air Force documents deal with specific cases and the punishments imposed. For instance, during a 2-month period, 10 aircraft were destroyed and 4 damaged, and 18 people were killed as a result of these breaches of discipline. A total of 478½ months of imprisonment was imposed, 52 weeks of confinement to barracks, and 6 weeks of restriction to camp limits. Twenty men were demoted. Six men who were killed were deprived of the honors of a military funeral. In Germany this last punishment is much worse than it sounds; it involves the refusal of pensions or any other form of state support for the man's family and dependents.

One unusually serious case was made the subject of a special communication which was to be read aloud to all flying crews in all German Air Force units, at home and abroad: A young fighter pilot under training was ordered to take a Bucker 131 (a light 2-seater training plane) from Schwechat to Villacoublay, France. He was required to fly above 1,600-1,700 feet. At first, he obeyed his instructions faithfully. But as he approached Ulm, he remembered that some

of his relatives lived in the neighborhood. He turned off his course, and circled over their house three times, at altitudes ranging from 320 to 250 feet. By now he was only 3 miles from his parents' home. He decided to pay them a visit, too. This time he circled over the house five times, at heights between 170 and 250 feet. He then thought it only proper that he should call on his fiancé, inasmuch as he was in the neighborhood. So he set his course for Routlingen, and flew over the girl's house four times, at approximately 150 feet. It was only when he was leaving the area, and was about to return to his prescribed course and altitude, that he decided to turn back, land, and offer a more personal greeting. He made an excellent landing quite close to the house. Unfortunately, the girl was not at home, and he had to take off again. The pilot's prospective father-in-law started up the engine. However, while the pilot was taking off, he hit a tree, crashed on a road, and turned over. He himself was uninjured, but his passenger, a clerk from the unit's orderly room, suffered injuries to his head and right leg.

A court-martial was held, and the pilot was sentenced to 7 years of penal servitude and the loss of all military privileges and civil rights during this period. This sentence was sustained by Marshal Goering, who turned down all pleas for mercy and added that any part of the sentence falling within the duration of the war was not to be included in the sentence of 7 years, but added to it.

Section IV. GERMAN GUN-HOWITZER (STANDARD 105 MM)

1. GENERAL

The standard light gun-howitzer of the German Army is the 105 mm (see figs. 1 and 2). It is directly comparable to our 105-mm howitzer and to the British 25-pounder. The following table of characteristics shows the relationship between the German gun-howitzer and its American counterpart:

	<i>German 105-mm Gun- Howitzer</i>	<i>U. S. 105-mm Howitzer</i>
Weight.....	4,260 lbs.....	4,235 lbs.
Maximum range.....	11,674 yds.....	12,250 yds.
Maximum muzzle velocity.....	1,542 ft per sec.....	1,550 ft per sec.
Weight of standard H. E. shell.....	32.65 lbs.....	33 lbs.
Weight of bursting charge.....	3.0 lbs.....	4.8 lbs.

It must be noted, however, that the performance of the German gun-howitzer is rendered less effective by a standard use of charge 5 rather than charge 6.¹ This

¹ Howitzers with semi-fixed ammunition have propellant charges which are divided into sections called "zones." When a range has been determined, one or more zones can easily be removed from the shell case, so as to give the desired charge for the range in question. The German gun-howitzer, which has six zones, uses any combination of the first five as the standard charge; whereas the American howitzer, which has seven zones, uses any combination of the first six as the standard charge.

reduces the maximum muzzle velocity from 1,542 feet per second to 1,283 feet per second, and the maximum range from 11,674 to 10,007 yards. The use of semi-fixed ammunition cuts down the maximum rate of fire and further reduces the effectiveness of the weapon.

The German gun-howitzer may either be tractor-drawn or horse-drawn. In tractor-drawn units a light tractor is used; when the piece is horse-drawn, the howitzer and limber are pulled by a six-horse team.

2. DESCRIPTION OF COMPONENT PARTS

The tube of the German 105-mm gun-howitzer is long, and of monobloc construction, with the counter-recoil cylinder above it. The elevating mechanism permits the piece to be used as either a gun or a howitzer, as the occasion dictates. Its high elevation

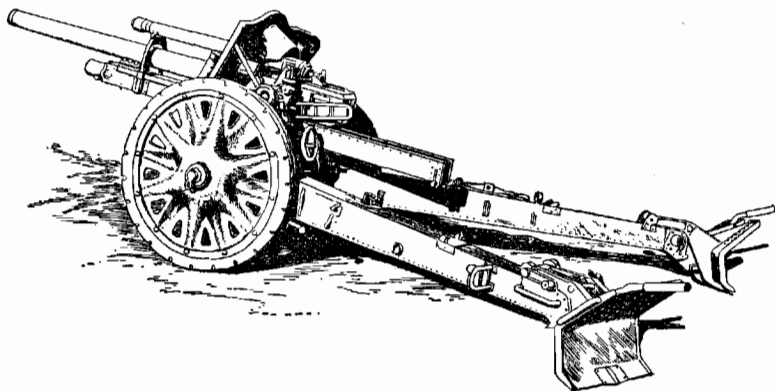


Figure 1.—German 105-mm Gun-Howitzer, Left Side View (trails spread and spades locked in position).

and the use of semi-fixed ammunition give it the characteristics of a howitzer. On the other hand, the long tube allows a high muzzle velocity, and the long split trail gives the piece good stability when it is to be used as a gun.

The breech mechanism is of the horizontally sliding type, and simply designed. Built-in safety devices

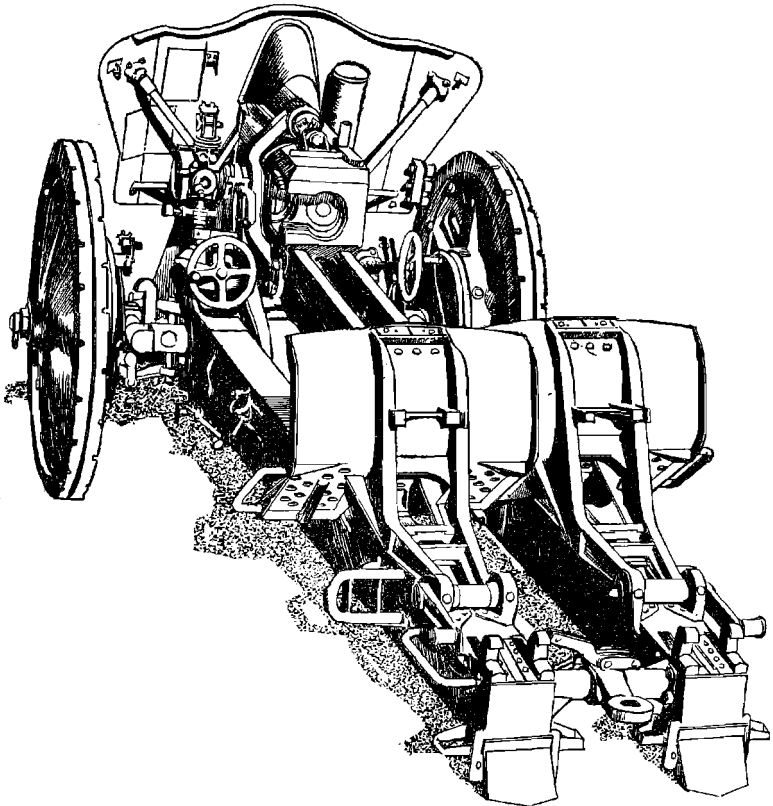


Figure 2.—German 105-mm Gun-Howitzer, Rear View (traveling position).

allow the firing mechanism to operate only when the breech block is in the fully open or fully closed position. Also, a hand-operated safety device is provided.

The recoil and recuperator systems are of the hydro-pneumatic type. The elevating mechanism is a well protected unit; it is entirely enclosed except for the elevating arc and its pinion. The total elevating arc is 47 degrees and 37 minutes. Since the worm and worm wheel are permitted to move against Belleville springs, the recoil and counter-recoil force is absorbed.

The traversing mechanism is of the nut-and-screw type, and is almost completely enclosed. The total traversing arc is 56 degrees and 14 minutes, or 28 degrees and 7 minutes, to the right and to the left.

The bottom carriage is of very complicated design, and has more parts than the bottom carriage of our 105-mm howitzer.

In design and general construction, the optical fire-control equipment is similar to the corresponding equipment used on the American 105-mm howitzer.

3. AMMUNITION

The standard high explosive shell used in the German gun-howitzer consists of a shell case, primer, and propelling charge of nitroglycerine powder (divided into five zones and contained in cloth bags). This powder is not flashless.

The projectile consists of a two-piece steel shell, similar in shape to our 105-mm M-1 shell, and has a

rotating band of copper (on a steel backing) that is rolled into place.

A super-quick percussion fuze, or a time-and-percussion fuze, is provided, and a booster fits in a pocket below the fuze cavity.

Section V. GERMAN TANK MAINTENANCE AND RECOVERY

1. INTRODUCTION

The German Army attaches the utmost importance to the effective maintenance and prompt recovery of vehicles. In the German armored divisions, each tank company, battalion, and regimental headquarters has a repair section. Moreover, each tank regiment is provided with a workshop company consisting—for a regiment of six companies—of a headquarters platoon, 1st and 2d (repair) platoons, 3d (recovery) platoon, an armory section, workshops for communications equipment, and a company supply section. Larger regiments may be given added strength. According to pre-war organization, a tank regiment of three battalions had—in addition to its workshop company—a light workshop platoon. Although little information about the workshop platoon has been available since 1940, it is believed that the strength of the unit has been increased.

2. DUTIES OF UNITS

a. Repair Sections

Repair sections are responsible for the general maintenance of tanks, their armament, and their radio apparatus.

In camp and rest areas, a repair section checks the serviceability of vehicles in the unit to which it is attached; during this period, mechanics are sent to the workshop company for advanced training, or else master mechanics are brought in to give instruction.

On the march, repair sections travel with the tank units and deal with all vehicle or equipment breakdowns that can be repaired with field equipment and in less than 4 hours. If a tank breaks down, the repair section leader inspects it to determine the nature of the damage. If the damage warrants it, the tank is handed over to the recovery platoon of the workshop company to be towed away. Otherwise, two mechanics with a motorcycle and sidecar stay with the tank to make repairs, while the other elements of the repair section travel in the rear of the column—if possible, on higher ground, from which they can spot breakdowns. In this way, one vehicle after another of the repair section stays behind—ordinarily the motorcycles, but if the damage is serious, a converted PzKw I tank without turret or armament. The repair section truck always stays with the repair vehicle left farthest to the rear.

In battle, the company repair sections are under the order of the battalion commander and are directed by a battalion motor-transport officer. On the march, they follow closely behind the fighting units and range over the battle area, looking for broken-down tanks. If a tank cannot be repaired on the spot, it is made towable, and its position is reported to the workshop company's recovery platoon.

Repair sections are not allowed to undertake the welding of armor gashes longer than 4 inches. In battle, the regimental headquarters repair section is attached to a battalion.

b. Workshop Companies

(1) *General*.—The workshop company operates as far as 15 to 20 miles behind the fighting tanks of its regiment, except that the recovery platoon works in the battle area, mainly to tow out disabled tanks. The workshop company handles repair jobs which take up to 12 hours. Repair jobs requiring up to 24 hours are sent back to rear repair bases.

The workshop company has its own power and light system, power tools, a crane, and apparatus for electric welding and vulcanizing. Existing facilities on the spot, such as factories, are used whenever possible.

(2) *Tank Recovery Platoon*.—According to information received from prisoners of war, the towing vehicles and trailers of the recovery platoon are sent forward to regimental headquarters and operate under

its direction. The current method is to send two or three recovery vehicles forward with the fighting units. These vehicles advance in the line of attack and cruise across the width of the battle front. The Germans believe that hostile forces will be preoccupied with the German tanks and therefore will not attack the recovery vehicles, even when they come very close.

If a member of a tank crew orders the driver of a recovery vehicle to tow his tank to the rear, the former assumes responsibility for the action (in case it should later prove that the damage was unimportant and could have been fixed on the spot by a repair section). It is always permissible, however, to request that a damaged vehicle be towed away if it is in danger of being shot up.

The towing vehicle usually goes forward alone, and tows a disabled tank away by tow ropes. Towing is used in preference to loading on a trailer. A prisoner of war explains that in the North African desert the latter operation may take as long as 20 minutes—and time is precious in front-line recovery. Prisoners state that trailers are being used less and less and that their use is confined chiefly to roads. On roads a higher speed can be maintained, and the trailers neither cut up the road surfaces nor weave as much as a towed tank. In roadless parts of the desert, trailers are resorted to where the ground is bad, and towing is done where the ground affords reasonably good going.

The recovery platoon is not given the whole responsibility for the important work of salvaging tanks. In case of retirement, the Germans use combat tanks to tow disabled tanks. Instances have been reported in which, even during battles, combat tanks have been employed both to protect towing operations and to assist in the towing.

Recovered tanks are towed to an assembly point behind the combat area. Trailers may be used to take the disabled tanks from the assembly point to a workshop company.

According to prisoners of war, the drivers of recovery vehicles have done front-line duty for about 8 days at a time, and then worked at the rear, between assembly points and workshops. One prisoner who had been a driver reported that he usually had a crew of two unskilled men with him. It was his opinion that skill was not so necessary as a fair amount of intelligence and plenty of courage.

c. Light Workshop Platoon

A German document from North Africa gives detailed instructions for organizing a workshop platoon in a two-battalion tank regiment (which normally would not have this unit). In this case, a good illustration of how flexible German organization can be, personnel was obtained for the platoon by breaking up the battalion headquarters repair sections of the two battalions. This platoon was smaller than the

workshop platoon designated by the pre-war organization for a tank regiment of three battalions, and was to operate in place of the battalion headquarters repair sections, under direct regimental command. The platoon was to serve as a link between the workshop company and the company repair sections. Like the latter, it would handle work requiring less than 4 hours. In attack, it would follow the central axis of advance, keeping in close touch with the workshop company's recovery platoon.

The light workshop platoon was to work on brakes, gears, and clutches of PzKwII's; on damaged gear-mechanisms of PzKwIII's; and on valve defects in all types of truck and tank engines, except PzKwIII's and PzKwIV's. Also, the platoon was to repair electrical and fuel systems; salvage and tow wheeled vehicles; repair wheeled vehicles; perform autogene welding and soldering work; and charge and test batteries and electrical apparatus.

Section VI. MISCELLANEOUS

1. GERMAN DESTRUCTION OF MOTOR VEHICLES

A recent German Army document shows the importance that the Germans attach to the destruction of motorized equipment before it can fall in our hands. The document also describes methods of accomplishing the destruction most effectively.

The Germans state that if very little time is available for the destruction of a motor vehicle, four vital parts which can be destroyed quickly are the carburetor, the distributor, the fuel pump, and the ignition coil. The destruction of these parts is accomplished with a hammer, hatchet, pick-axe, or similar tools. A hand grenade placed between the cylinder block and the carburetor or distributor is especially effective, since this results in a cracked cylinder block as well as in the destruction of the carburetor or distributor.

The Germans recommend that if more time is available, the following be demolished also: the generator, the battery, the starter, and the tires. As soon as these

have been destroyed, gasoline is poured over the vehicle and ignited.

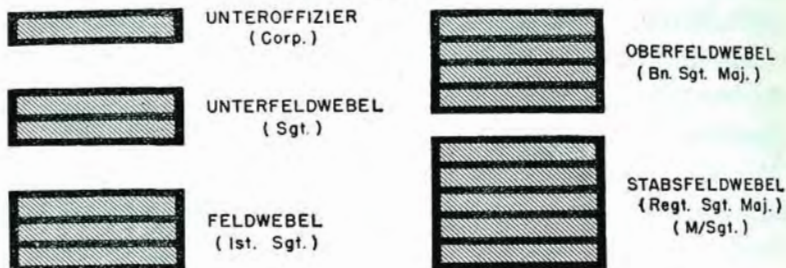
The motors of track-laying vehicles are destroyed in the manner recommended for wheeled vehicles. In addition, the driving sprockets may be demolished. The Germans place a 5-pound prepared charge of TNT between the sprocket and adjacent bogie. If possible, similar charges are set on both sides of the vehicle. The charges are wedged in place with wood or stone to obtain maximum destruction. A length of safety fuse, long enough to insure a 25-second delay, is recommended for use in firing the charge. Demolitions of this type are performed only by those trained in the handling and use of explosives.

It should be noted that the above instructions apply specifically to the destruction of gasoline engines making use of the ordinary spark plug for ignition. A vehicle powered by a Diesel engine has no carburetor, distributor, or spark plugs; in wrecking a Diesel engine, the Germans destroy the fuel-injection system by means of a hand grenade.

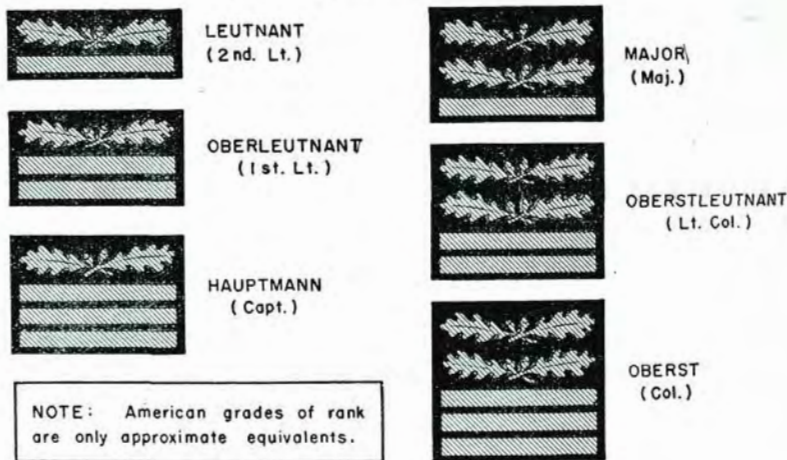
2. NEW GERMAN ARMY INSIGNIA

New insignia have been issued throughout the German Army, to be worn on the left arm, 4 inches below the shoulder, when shoulder straps are not worn (see fig. 3, on following page).

NON-COMMISSIONED OFFICERS



COMMISSIONED OFFICERS



NOTE: American grades of rank are only approximate equivalents.

 BLACK  GREEN

Figure 3.

3. THE FIRE FIGHT

A British Army handbook on fieldcraft and battle drill stresses the importance of the fire fight, lists the fire power of the German infantry division, and summarizes German methods in defense and attack. Extracts from this handbook are given below.

a. General

The morale and fatigue factors being equal, it is fire superiority which will win or lose battles. The side which applies the greatest quantity of fire at the right time and at the right place usually will succeed. It is fatal to attempt movement without having made proper arrangements for fire superiority.

b. German Infantry Division Fire Power

(1) *Reconnaissance Unit.*

Mobile covering troops with mortars (three 50-mm and three 81-mm) and machine guns may be encountered on a very wide front.

(2) *Infantry Regiment.*

The infantry regiment consists of three infantry battalions. Each battalion has four companies—three rifle companies and a machine-gun company (although Nos. 4, 8, and 12 are called machine-gun companies, they also include 81-mm mortars).

(a) *Rifle Companies.*

Each company consists of a headquarters group, three platoons, and an antitank rifle section.

Each platoon consists of a platoon headquarters, four rifle sections (each consisting of a second-in-command and nine men), and a light mortar section.

Each platoon has a platoon sergeant, a bugler (who carries a machine pistol), two messengers, and a stretcher-bearer. It also has a one-horse vehicle.

The light mortar section has a team of three men (the mortar is normally a two-man load) and five ammunition cases containing nine rounds each.

The total strength of the headquarters group is nine men.

(3) *Platoon Weapons.*

The platoon weapons consist of a light mortar and 45 rounds (30 mm, range 550 yards); five machine pistols, 192 rounds per pistol (9 mm); four light machine guns—one per section, 1,150 rounds per gun (range 3,200 yards); and 28 rifles (90 rounds per rifle, carried by the individual soldier).

(4) *Support Weapons.*

(a) The antitank rifle section within each rifle company consists of a noncom and six men, with three antitank rifles.

(b) Each of the three machine-gun companies—Nos. 4, 8, and 12—has 12 heavy machine guns. These are fired off a tripod, have a range of 3,800 yards, and are capable of indirect fire (caliber .31 inch). Each company also has six 81-mm heavy mortars with a range of 2,078 yards.

(c) The regimental weapons in No. 13 infantry-gun company and No. 14 antitank company consist of six 75-mm light infantry howitzers, with a range of 5,600 yards (10- or 14-lb. shell); two 150-mm heavy infantry howitzers, with a range of 6,000 yards (80-lb. shell); and twelve 37-mm antitank guns.

c. Characteristics of German Defense

(1) Great attention is paid to camouflage, especially during the construction of posts.

(2) Covering positions are mobile.

(3) Weapon pits are used.

(4) Dummy positions are used extensively (“to draw and dissipate the opposition’s fire”) and movement from dummies to real positions take place when an attack begins.

(5) The siting of 81-mm mortars, heavy machine guns, and infantry guns is determined by:

(a) *Observation post sites.*—These must afford a good view from a high point.

(b) *Method of control*.—The infantry-gun and machine-gun companies have no radio, very little other signal equipment, and only 8 miles of field wire. Therefore, communication by line is limited. In the case of heavy mortars, communication is maintained by shouting or by line telegraphy or telephony only.

(6) The Germans tend to site positions in threes, in a clover leaf pattern.

(7) General mobility and immediate counterattack are the backbone of German defense doctrine.

d. Characteristics of German Attack

(1) The significance of the fire fight (*Feuerkampf*) is fully appreciated. The Germans adhere to the principle of fire superiority on a narrow front chosen as the "critical objective" (*Schwerpunkt* theory).

A typical concentration of fire for a battalion attack, which might be on about a 600-yard front, would be provided by—

- 6 heavy mortars from the machine-gun company,
- 12 heavy machine guns from the machine-gun company,
- 9 light infantry howitzers from No. 13 company,
- 2 heavy infantry howitzers from No. 13 company.

This is exclusive of light machine guns, machine pistols, and so on, and does not include the usual allotment of divisional artillery.

(2) The Germans distinguish between three aspects of the destruction of the opposition by fire:

(a) Destroying the opposition's personnel and their means of fighting.

(b) Forcing the opposition under cover and preventing them from using their own fire power.

(c) Blinding the opposition to prevent observation and avoid fire. The use of smoke figures in this method. Also, the psychological effect of stunning the enemy by the sheer weight of explosives is taken into account.

(3) The Germans use light signals to call for fire support.

(4) Three ranging rounds of mortar fire are likely to be followed by groups of 10 rounds.

(5) Mobile reserves of ammunition are maintained, to step up fire at a decisive place at a decisive time.

e. British Doctrine

(1) *In Attack.*

We must dispose our strength so that we have fine superiority at the point of impact. This is the key to success.

(2) *In Defense.*

We must keep a mobile reserve of fire—as large a one as possible—to counter the enemy's tremendous concentration at his point of attack.

PART TWO: JAPAN

Section I. AMPHIBIOUS TACTICS BASED ON EXPERIENCES AT WAKE

1. INTRODUCTION

Lessons learned by the Japanese in the land, sea, and air attack on Wake Island are contained in a recent enemy document. Of special note is the indication that the surrender of U. S. troops was hastened when a Japanese detachment got among civilian workers and began slaughtering them. Apparently the U. S. commander surrendered at that time to prevent further killing of these workers, realizing that surrender was inevitable anyway. The information given below has been taken from the enemy document, and is presented in a paraphrased and condensed form.

2. GENERAL PROCEDURE

You must not use a plan of attack that has been used previously, because the enemy can anticipate our actions. And don't forget to take the enemy by surprise. This is absolutely essential.

Our method of operation must be determined only by the progress of the battle.

There are many cases where the soldier must value speed more than finesse.

The issue of victory lies in the constant maintenance of the offensive spirit. The great success of this operation (capture of Wake Island) was due, in the final analysis, to the constant display of this spirit by all personnel, without regard for their own lives.

It is necessary to train especially picked troops for the landing force.

In landing in the face of the enemy, it is necessary to utilize timely diversions and deceptive movements. If the diversion does not succeed in its purpose, it will hinder rather than help the subsequent operations. Because the diversion effort at Wake was carried out before the invasion force landed, the result was rather to alert the enemy than to deceive him. In view of this, similar operations in the future should be thoroughly prepared beforehand in regard to time, place, and method of attack. It also is essential to have thorough communication arrangements so that all units can be advised of any last-minute changes in our landing plans.

In case the landing is restricted to a very narrow front and there is no room for a diversion, you must either carry out a thorough bombardment before and after the landing, or make the landing in overwhelming force. If the attempt is made to land secretly (that is, using only motor boats and landing only small numbers at one time) on a place like Wake Island where landing is limited to a small area, it is evident that great losses will be incurred.

In the invasion of a strategic island, the command must be unified. The invasion forces consist of the Occupation Force, the Covering Force (naval and air), and also a force we may call "Cooperation." [Comment: This force is believed to be com-

posed of reserves and unloading units.] The power of these forces cannot be developed fully if there is a lack of mutual understanding among them.

3. PREPARATIONS FOR LANDING

Because troops easily become scattered at night and control is difficult, execution of the operations must be made simple by detailed preparations. The following factors must be considered in deciding methods of operation, organization, and equipment:

a. Troops must be organized and equipped to fight independently during the daytime.

b. Remember that when the enemy's main batteries and other defense areas cannot be captured before daybreak, it is often impossible to get fire support from the ships during the day. [Comment: This shows a healthy Japanese respect for our shore batteries.]

c. At night, hand grenades and grenade throwers are extremely effective in silencing heavy guns. In day fighting, it is necessary to have machine guns and infantry cannon available for use.

d. All the first-line fighting strength must be landed at once. Quite often, motor boats used in the first landing become stranded and cannot be used for another trip.

4. LANDING PROCEDURE

If the beach is defended, it is absolutely essential to complete the landing before daybreak. In general, it seems that the earlier the landing time, the more effective it will be.

Although the Wake Island landing was effected 4 hours before sunrise, it turned out that the old saying "The hours of the night are short" was only too true. The landing originally was planned for execution at 2300 hours, but trouble in lowering the motor boats delayed us about 1½ hours. It is also necessary to allow

extra time for approaching the shore and making the main landing.

Where there are fringing reefs, low tide is more advantageous for landing than high tide.

At night the enemy shells pass overhead; so damage is slight, although you receive a fierce shelling.

It is easy to mistake the landing point at night. The leading boat must approach at half speed or low speed until the island can definitely be seen from the large landing lighters.

To lead the boats in close formation within range of the enemy's defense guns is extremely dangerous; however, in landing operations in the dark on long swells around an island, and if the boats deploy 4,500 to 5,000 yards from shore, the lighters will find it extremely difficult to hold their course, and almost impossible to reach shore at the designated point. Although four lighters were led within 3,500 yards of the shore at Wake, none of them arrived at the appointed time or place. Two lighters which accompanied patrol boat No. 32 lost sight of her on the way because she increased speed. It is necessary for the leading boat to have a low-powered signal light on its stern for signaling to the rest of the boats.

At the time of landing, the normal speed of the patrol boat should be maintained. When the boats are proceeding shoreward at about normal speed, the enemy has extreme difficulty in aiming.

It is necessary to unload the boats very quickly after reaching shore, and a great deal of equipment should be made ready in the bow of the boat.

5. THE FIGHT AFTER LANDING

a. General Observations

The enemy forces are, after all, easily beaten. Although the U. S. force was numerically equal to the invasion force and was

in a fortified position, it was defeated in a half day's fighting; so the conclusion is inescapable that the U. S. soldiers are at the beginning like lions, but at the end are gentle like virgins.

In the Wake Island operation, our landing force hardly fired a shot until daybreak, but used enveloping movements and hand grenades. In darkness, our use of rifle fire generally is damaging to us because it reveals our positions. Hand grenades and grenade discharges are extremely effective, particularly against enemy machine-gun positions, trenches, and so forth. There were some cases where enemy positions were surrounded from four sides, and use of the rifle might have caused casualties to friendly troops.

b. U. S. Tactics—How to Combat Them

(1) *Attacking a Defense Position.*—A diagram of a U. S. position is shown in figure 4.

Note that the Americans put two or three men out in front of their position. When we approach, they fire a volley and

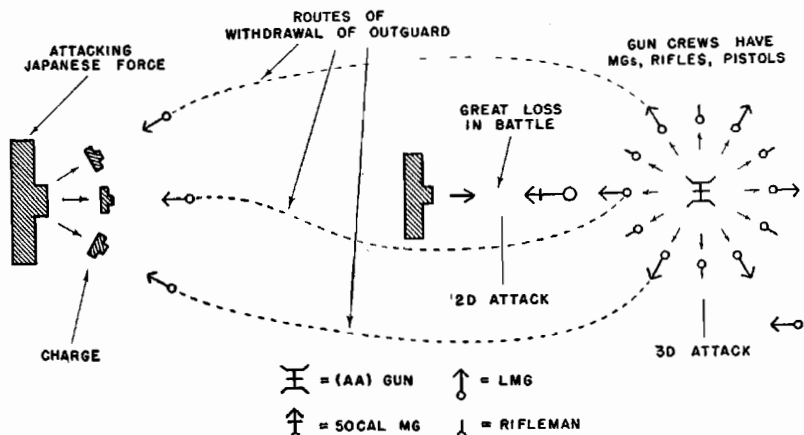


Figure 4.—Diagram of attack on U. S. position

fall back in an attempt to lead us to their main body. (Study the diagram.)

To combat such positions, encircle them at night and fire on them heavily with grenade throwers and hand grenades. Immediately thereafter, rush the positions from the flanks and rear as well as from the front.

If the night charge fails, or if the opposing forces confront each other in the daytime, it is most effective to encircle the position and begin fighting with hand grenades and grenade throwers.

(2) *How to Mop Up at Night.*—The Americans usually post a sentinel, armed with a light machine gun, about 200 to 300 yards in front of their positions. After firing a burst, the sentinel skillfully withdraws to a nearby slit trench. When our forces have passed by, he opens fire and throws our rear into disorder.

Against these tactics, divide the troops into an assault force and a mopping-up force.

When the assault troops locate the enemy position, they will rush it. Remember to have scouts ahead of the assault force and to keep a sharp lookout to the rear.

The mopping-up force advances after thoroughly searching the trenches in the occupied area, throwing two or three hand grenades into likely hideouts. This force then occupies the ground taken and posts sentinels to secure our rear.

See figure 5, which is a diagram for mop-up methods.

(3) *Attacking U. S. Positions in Heavy Brush.*—On Wake Island, the enemy (U. S.) had numerous positions in the heavy brush area. These positions had many small machine-gun nests, with a few 50-caliber machine-gun nests as the backbone of the defense.

When attacking from the open ground in front, our troops received the sweeping fire of these machine guns and our losses were great. When trying to attack the enemy's rear in the brush area, maneuvering was difficult because our troops were unacquainted with the terrain. Forces penetrating such positions

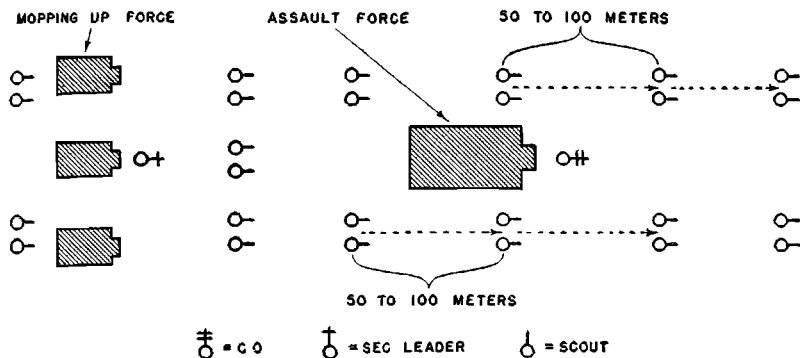


Figure 5—Japanese mop-up methods.

should use special care not to become dispersed. They should surround the enemy and then use hand grenades, grenade throwers, and so forth.

(4) *Attacking Skirmish Lines.*—Although the Americans deploy in skirmish lines, they do not hold their ground. When we charge, they fall back and assemble in the vicinity of a defensive position, but they do not turn to the offensive—that is, they almost never counterattack. We should take advantage of this with all our power.

(5) *Attacking Contractor's Workers.*—The U. S. contractor's workers have absolutely no fighting spirit. It is fruitful for us to raid those places where these workers may be found, as the first step in bringing about the surrender of the enemy. In the Wake operation, the success of one company's action as a flying column was the first step toward victory. [Comment: This unit apparently captured the contractor's workers and started slaughtering them.]

6. COOPERATION OF SHIPS AND AIRCRAFT

a. Destruction of land batteries with ship's guns or airplanes is difficult.

b. Direct cooperation between air and land forces is extremely effective, and the cooperation of light airplanes is essential (especially when we are weak in artillery and the enemy has powerful artillery, tanks, and so forth).

c. Detailed reconnaissance of enemy positions by airplanes appears to be extremely difficult.

d. It is sometimes hard to bomb air bases. It was difficult to see and bombard the Wake airfield with ship's guns because it is lower than the road around it.

7. COMMUNICATIONS

When landing, it is necessary to devise measures to keep communication equipment from getting wet. In the Wake operation, communication between ships and the shore was impossible because the radios and telephones either got wet or received severe shocks. The rockets and signal pistols also got wet, and, although fired, they were difficult to distinguish from the enemy's machine-gun tracer bullets.

The methods of communication must be simple. In a landing operation carried out by a number of cooperating units, it is necessary to perfect communications so as to maintain close liaison. It is most important to have several simple, sure means of communications so that they will function regardless of the situation.

Section II. NOTES ON THE JAPANESE— FROM THEIR DOCUMENTS

1. INTRODUCTION

Japanese comments on their operations, as revealed by their own documents, are given in this section. The documents have been paraphrased and edited to eliminate repetition and parts considered of little or no value. For the sake of clarity, individual documents are separated by a long dash.

2. REGARDING MORALE

The following are extracts from an address made by a Japanese commander to his troops in New Guinea on September 11, 1942:

. . . Endeavor to forget unpleasant incidents and to remember only the good. It is useless to brood over matters as a hysterical woman does.

We are all thin from lack of food, but do not show a haggard countenance when we get on the vessels. There is a saying that "The Samurai (warrior) displays a toothpick even when he hasn't eaten." [Comment: That is, he is too proud to admit

that he is suffering from lack of food.] This is an example worth emulating at the present time.

Since we have been here, there have been those among us who have worked well and also those who have been lazy. The men of the "suicide squads" and those with similar aspirations are among the bravest of the brave; on the other hand, those who have neglected their duty can only be considered despicable. Every individual must aspire to be a hero.

The document below, dated October 14, 1942, is a statement made by a Japanese commander to his subordinate commanders in New Guinea.

This is a most regrettable statement to have to make regarding soldiers, but this unit in facing air attacks here has turned out to be composed of cowards. There are some men who, in the midst of their work, take refuge before any order to do so has been given. This is a breach of military discipline which will not be permitted in the future.

The rigor of military discipline applies equally to those who advance without orders and those who do not advance when ordered to do so—to the brave as well as the weak.

When it becomes necessary to take refuge, obey the commands of your leaders. Those on the beach near the landing craft should take refuge in the jungle as far inland as the position of the rapid-fire gun unit. Even during the period when you are taking refuge, every unit commander must maintain liaison with the command, and also exercise control both over those who are engaged on some task and over the remainder of his unit. We are truly sympathetic with those who have to continue work during air attacks.

The first submarine relief went off better than expected, but the second failed. I think that any further attempts at rescue will

be even more difficult. As a matter of fact, the crew of the submarine, in endeavoring to rescue us, is engaged in a more death-defying task than we are ourselves. This command does not ask for anything more than that you should emulate the spirit of sacrifice of such men.

The "bulletin" below was issued by a Japanese commander December 1, 1942, on New Guinea.

It is reported that part of my unit retreated yesterday (30th), when the enemy penetrated the fixed radio station area. This is being thoroughly investigated by all Military Police members of the detachment.

It is to be remembered that anyone leaving the garrison area without orders will be severely punished or executed on the battlefield, in accordance with the Military Criminal Code. Hereafter there will be no leniency. In order to develop military discipline and strengthen the foundation of victory, deserters will be severely punished.

Those who have no rifles or swords will tie bayonets to poles. Those who have no bayonets will carry wooden spears at all times. Some are walking with bayonets only, or without any arms. Each man will prepare a spear immediately and will be as fully prepared as troops about to charge. Even the patients will be prepared.

3. REGARDING U. S. TROOPS

The following "Characteristics of the U. S. Army" were issued by the Japanese during the early phases of fighting on Guadalcanal:

- a. U. S. troops are simple-minded and easy to deceive.
- b. The enemy lives in luxury, so cut his lines of communication.

- c. The Americans possess a strong feeling of national unity, and they like novelty and adventure.
 - d. They are boastful, but are inclined to carry out their boasts.
 - e. They are optimistic and lack patience.
 - f. They excel in the technical field.
 - g. Their marksmanship is excellent.
 - h. They lack proper training in scouting and security.
 - i. The tempo of their attack is slow.
 - j. After the initial assembly, the enemy has difficulty in controlling succeeding movements.
 - k. Adjoining units do not cooperate with each other.
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4. REGARDING SECURITY

Observation parties watching for aircraft will note the following places particularly:

- a. The space between the mountains and the sky;
- b. Between clouds;
- c. The coast line and along rivers;
- d. Above villages.

When enemy aircraft are observed, report the number and direction of the flight to the commander, and the number, direction, height, and distance to the antiaircraft units.

No soldier will be on lookout duty more than 1 hour at a time. Two lookouts will be on duty at the same time at each post. One will watch the direction from which planes are most likely to come, while the other will watch the opposite direction and act as runner.

The following is an order by a Japanese commander to a "suicide squad":

I order the three of you to be messengers unto death . . . Should you encounter the enemy on the way, fight to a finish;

burn these papers, and each of you use your final bullet to take your own life rather than become a prisoner.

In writing home, mention nothing concerning current military operations; make no reference to the zone of operations, and make no reference to the state of training.

To avoid personal injury from falling coconuts, do not sleep under coconut trees.

5. REGARDING ATTACK

In the absence of a specific plan of action, attack during a dark night, or in the rain, to gain the maximum surprise effect. Another method is to assault the key enemy positions after they have been blasted by concentrated fire.

Plans of attack should not fall into one fixed pattern. It is best to confuse the enemy by changing the pattern as often as feasible.

. . . A captured position should be prepared for use against enemy counterattacks, and it should be held firmly.

Avoid the enemy's zone of fire.

. . . Most of our losses are suffered from artillery and mortar shells. When these enemy attacks cannot be neutralized, it is important to plan a desperate assault to occupy the enemy's strongholds. Remember that enemy artillery positions are protected by several automatic weapons and that the positions are strongly prepared. In attacking them, use smoke, deception, and penetrating forces, which should be at least the strength of a platoon.

6. REGARDING DEFENSE AGAINST AIR-BORNE TROOPS

The best way to deal with enemy air-borne troops (parachute units) is to annihilate them before they have time to assemble and consolidate their positions. Indispensable requisites in this type of defense are airtight security measures, including careful and thorough reconnaissance, and perfectly established communications and liaison.

Each commander is responsible for taking protective measures in his own area. These measures are to be carried out in conjunction with general antiaircraft defense, and with protection of structures and equipment.

The enemy drops paratroops to capture key communication positions and important military installations. Another practice is to interfere with our troop concentrations and deployment, and to drop a few troops secretly behind our lines to incite the inhabitants and start agitations.

7. REGARDING EQUIPMENT

a. Rubber Boats

Types	Capacity
Large	12-15 men
Medium 97	6-7 men
Small	2-3 men
Portable	1 man

These boats, which can be deflated and packed, are easy to transport and to inflate. They are easily damaged, and should be stored under cover when not in use.

The boats are designed for use by advance units in actions over terrain which has small, unfordable streams and lakes. They are not suitable for use by large forces or in the crossing of large

rivers or swift currents. (They are difficult to manage in currents moving faster than 5 feet per second.)

b. Land Mines

Types of these include a remotely controlled land mine, which is exploded by an electrical current; an automatic mine (alarm-clock type), and contact mines. These latter include a pressure-operated mine which is placed about 4 to 5 inches underground, and one which is adapted to use with a booby trap.

These land mines are not as good obstacles as are wire entanglements. However a large number of them can be laid in a short time.

In laying these mines, place them in dead spaces in front of a defensive position and near wire entanglements, about 3 to 5 yards apart.

Section III. JAPANESE FLAME THROWERS

1. INTRODUCTION

While the Japanese have as yet made little use of flame throwers, they are believed to possess them in some quantity. These weapons are not carried as organic equipment by units, but are held for issue to specially trained personnel when the weapons are needed.

The information in succeeding paragraphs of this section is paraphrased from a Japanese document titled: "Use and Effectiveness of Flame Throwers." The document mentions four types of Japanese flame throwers, but gives a description of only two. One of the latter, "No. 1 Flame Thrower," has a maximum range of approximately 30 yards—according to the Japanese document—while the other, "No. 2," has a maximum range of nearly 45 yards. The No. 1 weapon will maintain a steady flame for 10 seconds as compared to 12 seconds for No. 2, and No. 1 has a fuel-tank capacity of about 4 gallons as compared to more than 10 gallons for No. 2. The two flame throwers mentioned but not described are known as Type 95 and Type SS.

The fuel capacity of the No. 2 flame thrower indicates that it is of a type too heavy for one man to carry. It is probably a two-man load.

A Japanese flame thrower, designed to be carried by one man, was captured by U. S. forces on Bataan. It has been examined by the U. S. Chemical Warfare Service, and was described in *Tactical and Technical Trends*, No. 18, February 11, 1943.

2. HOW THEY OPERATE

Although the Japanese document as a whole speaks of flame throwers in general, it is believed that the Japanese charts refer to a type which is carried by one man and which throws a flame approximately 30 yards.

a. Flame Chart

The Japanese chart given below is measured in meters (1 meter=39.37 inches).

b. Fuel

The fuel for flame throwers usually is a mixture of gasoline, crude oil, and kerosene. Sometimes only two of these are used. The crude oil prolongs the burning and increases the length of the flame.

During an emergency, or when no kerosene is available, a mixture composed of equal parts (by liquid measure) of gasoline and crude oil may be used. When no gasoline is available, the mixture should be composed of 2 parts of crude oil and 4 parts of kerosene.

During hot weather, the mixture should be 1 part of gasoline, 3 parts of crude oil, and 6 parts of kerosene. For cold weather, the proportion of the more volatile component should be increased: the mixture should be 1.5 parts of gasoline, 2 parts of crude oil, and 6 parts of kerosene.

For burning out emplacements, the mixture should be 1 part of gasoline, 4 parts of crude oil, and 5 parts of kerosene.

c. Safety Features

With the fuel tank full and ready for use, the flame thrower can be dropped from a height up to 6 feet without affecting the fuel tank, air pressure, or air-tight seal.

With the weapon charged and ready for use, a direct hit on the air container by small-arms fire from a distance of 110 yards will not cause it to explode or burst.

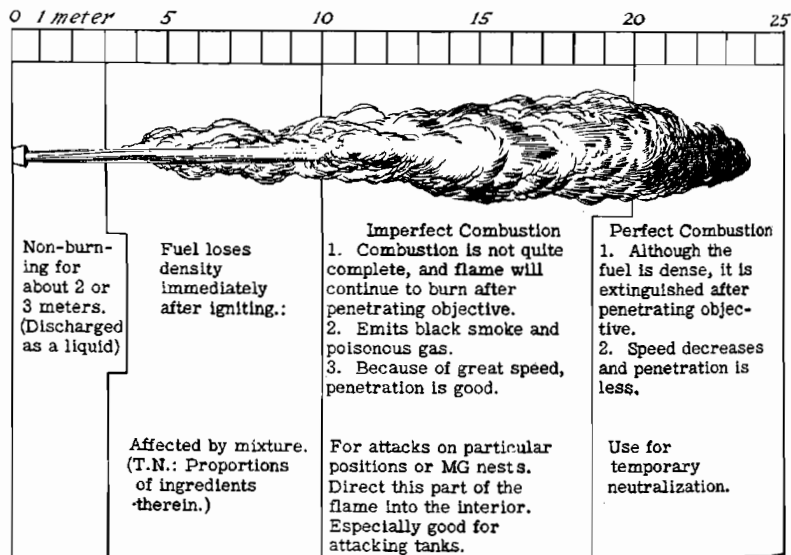


Figure 6.—Combustion chart for Japanese Flame Thrower.

If the same test is applied to the lower part of the fuel tank, fuel will spread over a radius of about 7 yards. If the upper part of the tank is hit, only gas will escape; the tank will not burst or explode.

3. TACTICAL AIMS

Flame throwers are designed to kill enemy troops, to set afire or explode certain objectives, and to build up the morale of our own forces by striking fear into the enemy. They are used during an assault to break up flank defenses, or in mopping up. They also are used in the capture of centers of resistance, obstacles, and key positions, and to attack tanks at close range.

4. TRAINING

The essential objects of training are to:

- a. Impart thoroughly the details of the construction and operation of the flame thrower;
- b. Teach the importance of maintaining the fuel supply and of being economical with it;
- c. Teach the proper maintenance of equipment;
- d. Teach the importance of observing strict discipline, because of the dangers involved in training;

Use water instead of fuel in training, but act as if it were real fuel.

5. TACTICAL EMPLOYMENT

a. Against Key Positions or Emplacements

A partly consumed discharge (imperfect combustion, see fig. 6) will attain the best results against an objective. However, for momentary neutralization, such as the initial subjugation of flank defenses, a perfectly burning discharge will achieve the purpose.

In attacking special positions (such as flank defenses), temporary neutralization is achieved by inflicting casualties among the defenders and rendering their ammunition temporarily unfit for use. To insure success, follow up with an attack using explosives. Because of the black smoke and noxious gases emitted, it is impossible for the enemy to post fresh guards for 5 to 10 minutes.

In attacking enclosed positions, direct the flaming oil through the loopholes. The stream will strike an inside wall, be reflected, and reach every part of the interior.

b. Against Tanks at Close Range

Our experiments show that flame throwers at close range can temporarily neutralize tanks by inflicting casualties among the crew and by stopping the engines. Complete destruction is possible if the action of flame throwers is followed by attacks with explosives. However, best results are obtained by setting fire to combustible parts inside the tanks.

Section IV. HOW THE JAPANESE TREAT NATIVES IN S. W. PACIFIC

1. INTRODUCTION

This section deals with the harsh methods used by the Japanese in dealing with the natives on the Southwest Pacific islands which the enemy has occupied. The information comes from Japanese documents, which have been paraphrased for the sake of clarity. These methods are described below to acquaint our troops further with some of the ruthless acts of the enemy, and to give them some pointers on how not to treat the natives.

2. ON GUADALCANAL

a. General

The natives of this island are to be made to cooperate with the Imperial Army. Unless they submit to 30 days of forced labor, they cannot obtain a resident's badge. However, women, persons under 14 and over 50 years old, and the crippled and diseased will be excused.

b. How to Handle Forced Laborers

Those who submit to forced labor without resistance will appear at a designated place and be registered. Thereafter they

must live apart from their families in an area to be called the "fixed dwelling place."

While submitting to forced labor, they will be given a temporary resident's badge and will be provided with food and other things necessary for housekeeping (from government supplies). One stick of tobacco will be given to each laborer per week. As a rule, give two sticks to the "boss boy" only. Upon completion of the 30 days of labor, give a loin cloth or other good gift to laborers who have good records.

All laborers will work 10 hours per day.

c. Discharge of Forced Laborers

When they have completed their 30 days of labor and have permission from the officer in charge, the laborers can return to their former abode or move to a suitable place.

If the forced laborers are negligent in their work, their temporary residence badges will be taken from them after the third offense and they will have to work 10 additional days. After five offenses, they will work 20 additional days.

Those who conduct themselves well and are diligent will receive good-conduct badges.

Those who receive the highest good-conduct badges will be made chiefs and otherwise rewarded.

Divide the chiefs into big and little ones, and give a big chief jurisdiction over two or more little chiefs.

The chief will receive his control of village affairs from the government [Japanese], and will act on the orders of the government.

3. IN S. W. PACIFIC AREA AS A WHOLE

The natives of this area are generally simple and docile and habitually respect their masters. In some respects, however, because of the previous system of control, they have a habit of as-

serting their rights (they easily forget their duties), and many of them, affected by missionary education and leadership, persist in those manners.

The following points should be the general standard in handling the natives:

a. By the authoritative and strict rules of the Imperial Army, see that they give us true respect and obedience. Induce them to become Japanese subjects.

b. Prohibit the religious teaching (usually accompanied by schooling), which they have had from the missionaries, but do not restrict the individual faith of the natives.

c. Although you may try to indoctrinate them with the Japanese type of spiritual training in its entirety, it will be hard for them to understand and usually there will be no results. For the present, make them understand well the great power and prestige of Japan and the superiority of the Japanese race, and bring them to trust us, admire us, and be devoted to us.

d. Be sure none of the natives serve as spies for the enemy. In such cases, take severe measures.

e. Do not enter their dwellings or chat with them on a level of equality.

f. The missionaries and Axis country nationals (those remaining are mostly Germans) use their positions as priests and as citizens of allied nations to maintain their former rights, profits, and foothold. On the surface, they promise to cooperate with us, but the real intentions of many are to further their own interests. Investigate them very strictly and, without being excessively high-handed on the surface, direct matters in such a way as to gradually destroy their power, interests, enterprises, and so forth. If necessary, seek additional instructions from higher authority.

g. In the new Imperial territory, the churches, their proselyting, and their education are to be prohibited.

h. The land and all natural resources are government property, and, for the present, private ownership of them will not be recognized.

Section V. JAPANESE EXPLANATION OF S. W. PACIFIC REVERSES

According to the Japanese, they won a "strategic" victory in the lower Solomon Islands and in the Gona and Buna areas of New Guinea. The enemy's version of the fighting was given in a report made to the Japanese Diet (parliament) by Major General Sato, Army spokesman representing both the Army and Navy. The report was picked up by the Federal Communications Commission from a Japanese broadcast.

Explaining the Japanese strategy in the South Pacific, General Sato said that their "advance guards," on Guadalcanal and in New Guinea, held the American and Australian troops until the Japanese main forces could consolidate positions closer to their supply bases "for a concrete operation in the future."

". . . At the beginning of September," General Sato said, "We crossed the Stanley Mountain range and neared the vicinity of Port Moresby. However, owing to general circumstances, our unit withdrew to the vicinity of Buna, and began the task of diverting the enemy to this area."

General Sato claimed that the Japanese “withdrew” from Buna and Guadalcanal only after accomplishing their objectives—holding United Nations forces until the main Japanese forces were well established in the rear. “The withdrawal of our forces in both areas was carried out in an orderly manner and, moreover, in a calm manner, while always attacking the enemy and keeping him under control.”

General Sato admitted that the Guadalcanal operation was “nerve-wracking” because the Japanese units “had to operate several thousand nautical miles away from the base line which connects Malaya and the Philippine Islands. Therefore, it was inevitable to have differences in effectiveness and speed of operations between our forces and the enemy forces . . . Because of this fact, it would have been ignoble strategy for our forces to have sought a decisive battle in a location strategically disadvantageous.”

“. . . Due to such harmonious unity between our Army and Navy,” General Sato continued, “the most difficult strategy—a withdrawal under the very noses of the enemy—was done calmly and in an orderly manner, with almost no losses. This is something unprecedented in the world.”

Section VI. JAPANESE A/A GUNS

1. GENERAL

When the Americans captured the Guadalcanal airfield, they found that the Japanese had left behind three types of anti-aircraft guns. These were naval guns, set up on shore. They included twelve 75-mm anti-aircraft guns, one 25-mm pom-pom, and one 13.2-mm machine gun. The 75-mm weapons, on naval-type mounts, were emplaced in a triangular formation, each side about 4,500 yards in length. The pom-pom and the machine gun were found in separate positions along the shore.

2. DETAILS OF 75-MM A/A GUN

The 75's (see fig. 7) were in three batteries, each consisting of four guns. They were emplaced in open pits with sandbag revetments, and had 360-degree traverse and 75-degree elevation.

Each gun has two telescopic sights, one mounted on each side of the mount with a traversing handwheel on the right and an elevating handwheel on the left of the mount. Lateral deflection, vertical deflection, slant

range, and super elevation are all set on a series of drums, disks, and dials on the left side of the mount.

The slant-range drum has two scales. The outer is graduated from 0 to 7,000, and the inner from 100 (opposite the 0 on the outer scale) to 300 (opposite 6,000 on the outer scale). This drum is turned by a small handwheel.

The lateral-deflection drum turns on a spiral, and is graduated from 0 to 200.

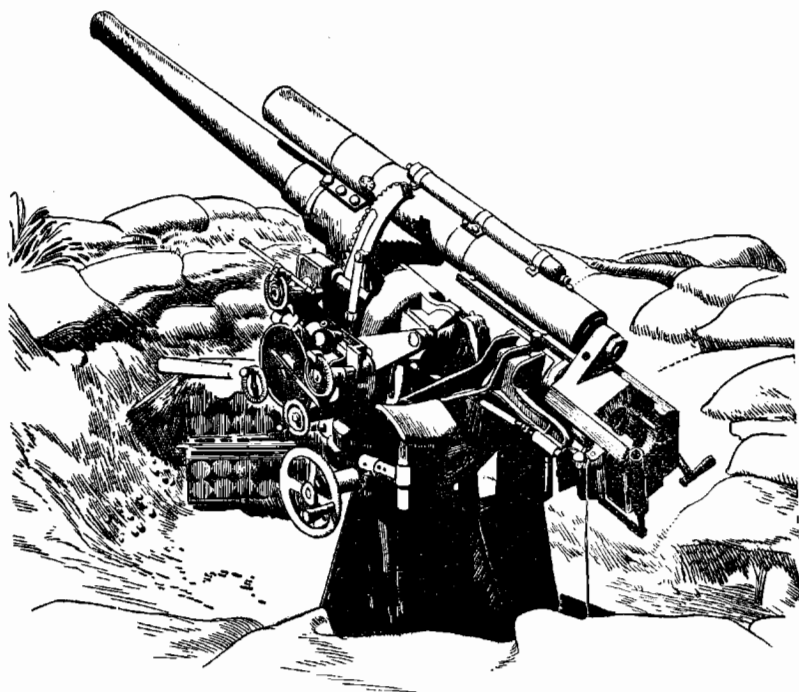


Figure 7.—Japanese 75-mm A/A gun.

The superelevation curves are on a disk, operated by another small handwheel.

The gun also has an open sight mounted on a drum. The controlling handwheel moves only the vertical sight.

There were no directors at any of the gun sites, but at each was a navy-type coincidence range finder with a 68-inch base.

The guns fire high-explosive shells which have 30-second mechanical time delay and percussion fuzes. The weapons have no fuze setters, as ours have. Instead of fuze setters the Japs used a manual two-piece tool. One piece, a long plier-like tool, holds the fuze by its bottom ring, below the graduations. The other piece, shaped like a truncated cone with handles on each side, fits over the fuze nose and engages the lug on the side of the fuze. The fuze is set by holding it with the first tool and rotating the second tool. It is not clear how the fuze-setting is obtained.

3. DETAILS OF 25-MM POM-POM

This gun is a Hotchkiss type, gas-operated, air-cooled, magazine-fed weapon (see fig. 8). It consists of three 25-mm cannon mounted side by side on a naval-type, three-gun pedestal mount. The gun fires armor-piercing and tracer shells from a 15- or 20-round vertical box magazine, which fits into the top plate of the receiver. The sighting is on the same gen-

eral principles as that of the 75-mm gun described above.

4. DETAILS OF 13.2-MM MACHINE GUN

This weapon is a 13.2-mm (52-caliber) Hotchkiss type, gas-operated, air-cooled, magazine-fed anti-aircraft machine gun, mounted on a naval-type pedestal

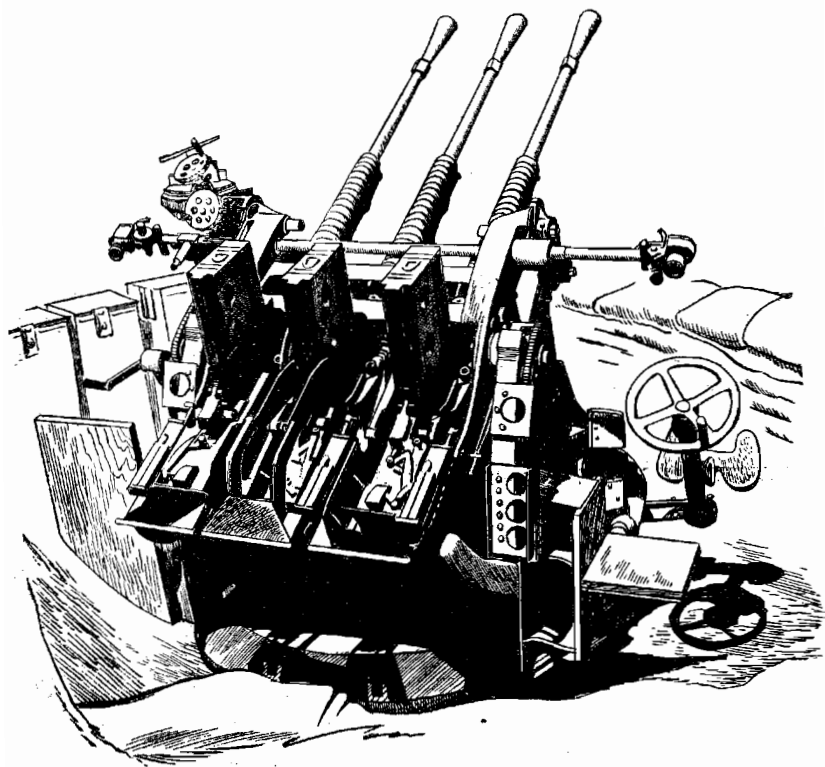


Figure 8.—Japanese 25-mm pom-pom gun.

mount. It is fed by a 30-round semicircular magazine which fits into the top of the receiver. The gun has a shoulder stock and pistol grip. Antiaircraft sights are mounted on the gun. They are composed of a front-ring antiaircraft sight and a rear sight; the latter consists of a small vertical rod with a ball tip. This weapon is the standard heavy antiaircraft machine gun.